JVC Service Manual

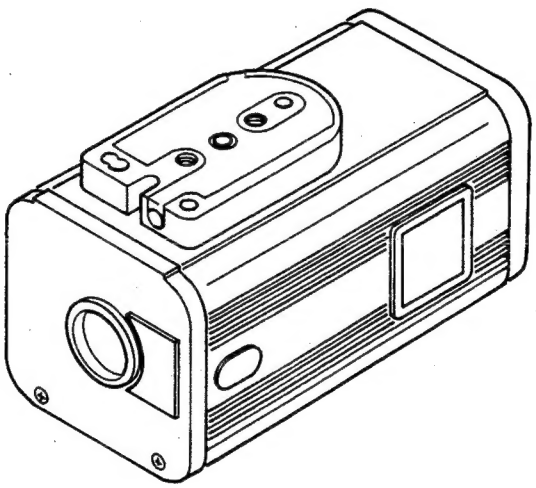
THREE CCD COLOR VIDEO CAMERA
DREI CCD-FARBVIDEO KAMERA
CAMERA VIDEO COULEUR A TROIS CCD

MODEL
MODELL
MODÈLE **KY-F55**

VICTOR COMPANY OF JAPAN, LIMITED

No. 60088

JVC Service Manual



MODEL **KY-F55**

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Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (▒) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistors
   5) Barrier

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

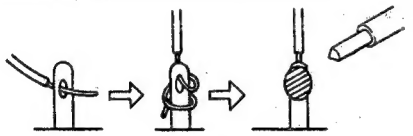


Fig. 1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10—15 kg of force in any direction will not loosen it.

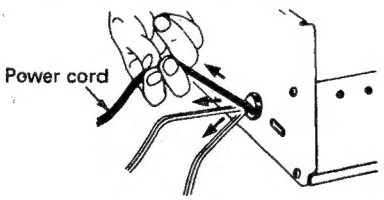


Fig. 2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

    1) **Connector part number** : E03830-001
    2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

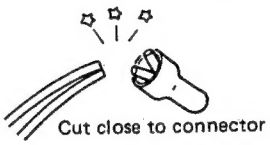


Fig. 3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

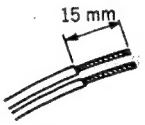


Fig. 4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

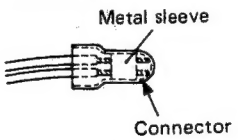


Fig. 5

(4) As shown in Fig. 6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

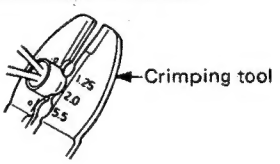


Fig. 6

(5) Check the four points noted in Fig. 7.

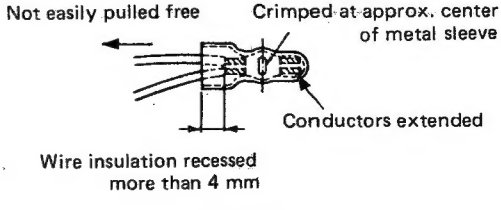


Fig. 7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

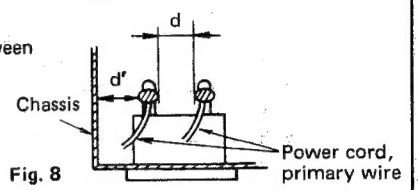


Fig. 8

4. Leakage current test

Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method: (Power ON)

Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

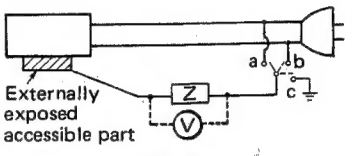


Fig. 9

5. Grounding (Class I model only)

Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).

Measuring Method:

Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

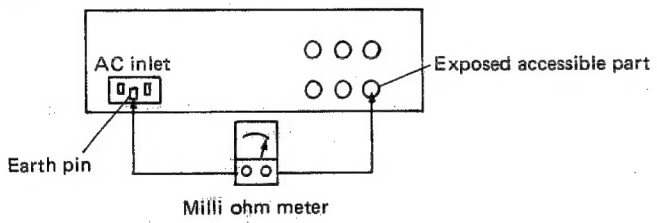


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R≧1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 minute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	–	AC 900 V 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R≧10 MΩ /500 V DC	AC 3 kV 1 minute (Class II) AC 1.5 kV 1 minute (Class I)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

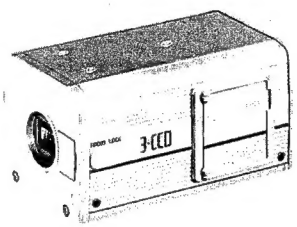
AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 μF, 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

JVC Instructions

3-CCD COLOR VIDEO CAMERA KY-F55



For Customer Use:
Enter below the Serial No. which is located on the bottom of the body.
Retain this information for future reference.

Model No. KY-F55

Serial No.

CAUTION
RISK OF ELECTRIC SHOCK. DO NOT OPEN.

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK).
NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulatd "dangerous voltage" within the product's enclosure that may be sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within a equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

POWER SYSTEM
This color video camera should be used with 12 V DC only.

CAUTION:
To prevent electric shocks and fire hazards, do NOT use other than specified power source.

Due to design modification, data given in this instruction book are subject to possible change without prior notice.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

AVERTISSEMENT:
POUR EVITER LES RISQUES D'INCENDIE OU D'ELECTROCUTION, NE PAS EXPOSER L'APPAREIL A L'HUMIDITE OU A LA PLUIE.

Information for USA
This device complies with Part 15 of the FCC Rules.
Changes or modifications not approved by the original manufacturer could void the user's authority to operate the equipment.

Information for CANADA
This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference causing equipment standard entitled "Digital Apparatus", ICES-003 of the Department of Communications.

Renseignement pour CANADA
Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matériel brouilleur; "Appareils Numériques", NMB-003 édictée par le ministre des Communications.

Changes or modifications not approved by JVC could void the user's authority to operate the equipment.

Thank you for purchasing the JVC KY-F55 Color Video Camera.
To gain maximum benefit from the use of the KY-F55, it is suggested that you study this booklet carefully.

CONTENTS

FEATURES

- **High-performance 3-CCD camera**
  Thanks to a newly developed 1/3-inch 380,000 : for NTSC, 440,000 : for PAL pixel CCD with on-chip lens, the KY-F55 delivers a superb, high-quality picture with an S/N ratio of 60 dB : for NTSC, 58 dB: for PAL and sensitivity as high as 2000 lux at F5.6. High-precision bonding technology and new circuitry incorporated in the CCD assure horizontal resolution of 750 lines.

- **Compact and lightweight**
  Incorporating a C-type lens mount, 1/3-inch optical system, and a newly developed IC chip with high-density mounting technology, the KY-F55's design is remarkably compact and lightweight.

- **Comprehensive functions**
  To simplify setup and operation, the KY-F55 incorporates a comprehensive range of automatic functions including automatic level control (ALC), continuously variable electronic shutter (EEI), and full-time auto white balance (FAW). For added convenience, the C-type lens mount features a back focus adjustment function. Two optional lenses are available — the HZ-610MD 10X power zoom lens and the HZ-G6350 variable focal lens. A remote control input connector is also provided (for the optional RM-LP55 remote control unit).

- **Comprehensive signal outputs**
  Outputs for composite video Y/C, R/G/B and composite sync signal are provided.

FEATURES

- **Electronic shutter**
  Because the normal scanning speed of a TV camera is equivalent to a shutter speed of 1/60 sec. : for NTSC, 1/50 sec. : for PAL, pictures of fast-moving subjects shot at this speed will be blurred. To allow you to adjust shutter speed to suit the requirements of different shots, the optional remote control unit features a built-in electronic shutter function. Shutter speed can be switched in 7 steps: NORMAL, 1/100 : for NTSC, 1/120 : for PAL, 1/250, 1/500, 1/1000, 1/2000, EEI, and V. SCAN. This is especially effective for motion analysis or when shooting images displayed on a computer monitor.

- **Flicker-free shooting**
  [NTSC]
  By setting the electronic shutter to 1/100-sec., you can eliminate the flicker caused by shooting under a fluorescent lamp operating on a 50 Hz.
  [PAL]
  By setting the electronic shutter to 1/120-sec., you can eliminate the flicker caused by shooting under a fluorescent lamp operating on a 60 Hz.

- **Automatic internal sync/external sync switching**
  The KY-F55 incorporates an automatic internal sync/external sync switching system which is especially useful when switching camera images in multi-camera systems or when upgrading the system.

- **Built-in SMPTE-type color bars generator (for NTSC)**
  SMPTE-type color bars signal can be generated for easy and precise color adjustment on a monitor.

PRECAUTIONS

Safety Precautions

- Use the AC-C712 : for 120 V AC, AC-C722 : for 220 V AC Adapter.
- Do not modify the unit or operate it without cover panel to prevent danger.
- When there is any abnormality (abnormal noise, smell, smoke, etc.) with the unit, immediately turn the power off and contact your nearest JVC-authorized service agent.
- If the camera is not going to be used for an extended period of time, leave the power cord disconnected for reasons of safety.

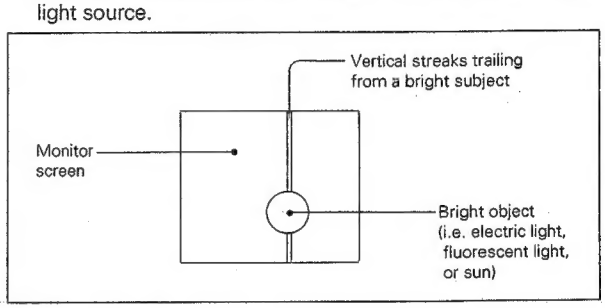
Handling Precautions

- **Supply voltage**
  Make sure that the power is between 10.5 V and 15 V DC. If the power voltage is too low, abnormal color and increased noise could occur. Do not exceed 15 V DC in any case, or the unit could be damaged.
- **Ambient temperature**
  Do not operate the camera outside a –5°C to +40°C (23°F to 104°F) temperature range.
- Where there are strong electromagnetic waves or magnetism, for example near a radio or TV transmitter, transformer, motor, etc., the picture may contain noise and the colors may be incorrect.
- When a wireless microphone or wireless microphone tuner is used near the camera, the tuner could pick up noise. In such a case, select another channel.
- **Cleaning the body**
  Wipe body with a dry, soft cloth (such as cheesecloth). When it is extremely dirty, soak the cloth in a solution of neutral detergent, wring it out and then wipe.
  To prevent deformation of the body, etc. and to avoid operation hazards, do not allow volatile liquids such as benzine and thinner to touch the body, and do not wipe it with a cloth soaked in such a liquid.
  If the quipment is soiled with water, oil, solvent, etc., wipe over with soft cloth or cotton first, then clean with gauze, etc. soaked in denatured alcohol.

Characteristics of CCDs

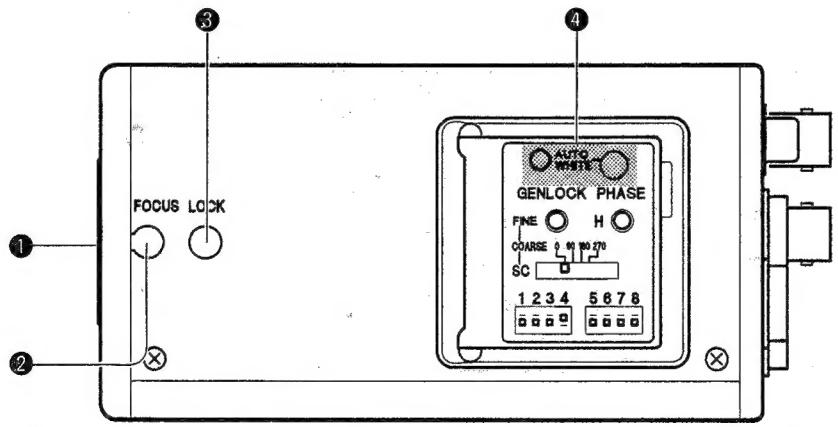
The appearance of the following phenomena on pictures is due to the characteristics of CCD image sensors. These are not malfunctions.

- **CCD Smear and blooming**
  Due to the physical structure of the CCDs in this camera it is possible to induce vertical streaking or smear when shooting an extremely bright light source.
  Another effect is the expansion of light around a bright light or object called Blooming.
  Just as you protect your image against lens flare (internal lens reflections); please be careful when shooting a bright light source.



- **Moire or Aliasing**
  Shooting stripes, checks, or other alternating patterns may cause jagged or banding in fine mesh patterns.
- **White dots**
  White dots may appear on the screen when the camera is operated in a high-temperature environment.

CONTROLS, CONNECTORS AND INDICATORS

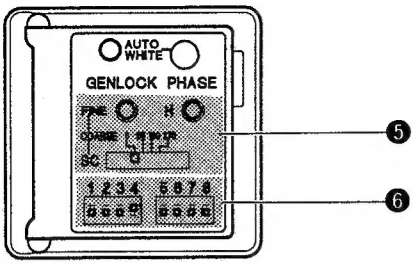


❶ Lens mount
Attach the C-mount lens here.

❷ [FOCUS] back focus adjustment screw
Preset at the factory to cover the widest range of applications. Readjust as necessary depending on the combination of lenses used.

❸ [LOCK] Back focus fixing screw
Turn this clockwise to fix back focus after completing back focus adjustment.

❹ [AUTO WHITE] Auto white button and operation indicator LED
Press this button to start the auto white balance adjustment. The LED illuminates during adjustment and goes out when the operation is completed. If adjustment cannot be completed, the LED will flash for 5 seconds, then go out.



5 [GENLOCK PHASE] Genlock phase adjustment
If two or more cameras are used, the phase of the camera's video output signal can be adjusted with reference to the input external sync signal.

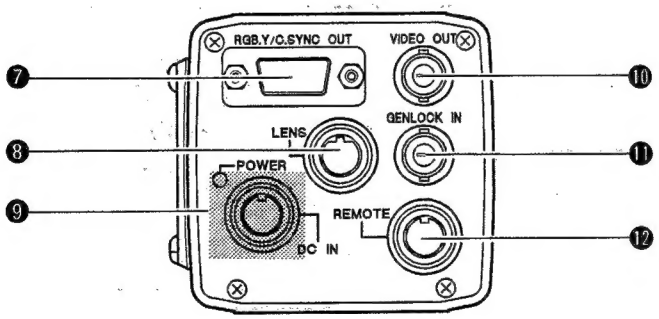
SC COARSE : Coarse adjustment switch for SC phase which allows approximate phase adjustment in 0°, 90°, 180°, and 270° steps.
SC FINE : Fine adjustment of SC phase.
H : Control of horizontal sync phase.

6 [1 to 8] Setting switches

No.	Name	Up	Down	Function
1	DATA	REMOTE	CAM	This switch is applicable only when the RM-LP55 is in use. Normally set to the CAM position. If set to REMOTE, the camera will enter the mode set by the remote control (even if the remote is disconnected).
2*	WHITE BALANCE	FAW	AUTO	Normally set to the AUTO position. In the AUTO position, white balance is automatically adjusted with the Auto White Button 4. In the FAW position, color temperature is automatically maintained and white balance is automatically adjusted as necessary.
3	MODE	BARS	CAM	Set to BARS to output the color bars signal (NTSC: SMPTE-type, PAL: Full-type). Set to CAM to output the camera's video signal.
4	D-SUB OUT	RGB	Y/C	Output signal selector switch for the 9-pin D-SUB connector. Factory-preset to the R/G/B signal.
5*	SHUTTER (for NTSC)	1/100	NORMAL	Set to 1/100 to reduce flicker when shooting under a 50 Hz fluorescent lamp. Set to NORMAL for a shutter speed of 1/60 second. (Normally set to NORMAL)
5*	SHUTTER (for PAL)	1/100	NORMAL	Set to 1/120 to reduce flicker when shooting under a 60 Hz fluorescent lamp. Set to NORMAL for a shutter speed of 1/50 second. (Normally set to NORMAL)
6*	EEI	ON	OFF	Set to ON to automatically decrease sensitivity in excessively bright shooting conditions. (Normally set to OFF)
7*	ALC	ON	OFF	Set to ON to automatically increase sensitivity when there is insufficient light. (Normally set to OFF)
8	LENS	MANUAL	AUTO	When using the manual iris lens, set to MANUAL. (Normally set to AUTO)

Note: If the DATA switch 1 is set to "REMOTE", switches marked by an asterisk (*) become inoperative.

CONTROLS, CONNECTORS AND INDICATORS



7 [RGB. Y/C. SYNC OUT] D-SUB connector
Outputs the R/G/B or Y/C signal (selectable using D-SUB OUT switch 6) and the video signal/sync signal.

8 [LENS] lens connector
Lens cable connector for use with the 10X power zoom lens (optional: HZ-610MD) or variable focal lens (optional: HZ-G6350).

9 [POWER, DC IN] Power indicator LED and DC power input socket
Input the 12 V DC power from the AC adapter (optional: AC-C712 for 120 V AC, AC-C722 for 220 V AC). When power is input, the power indicator LED will light.

10 [VIDEO OUT] Composite video signal output connector
Outputs the composite video signal.

11 [GENLOCK IN] External sync signal input connector
The reference signal input connector for use in genlocking the KY-F55. Input either a composite video signal or black burst signal.

12 [REMOTE] Remote connector
Connector for the remote control unit (optional: RM-LP55).

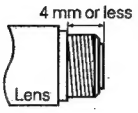
Note:
When the remote control unit is connected, priority is given to those functions selected via the remote control unit.

■ Mounting the lens

The KY-F55 is not provided with a lens. The optional HZ-610MD (10X power zoom lens) and HZ-G6350 (variable focal lens) can be used.

Cautions:

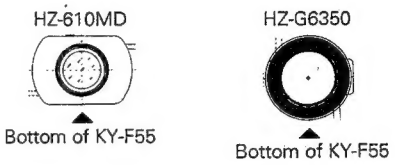
- Use a lens that is 4 mm or less from the lens mount; otherwise, the camera may be damaged.



- Keep in mind that auto functions of lenses other than those mentioned above cannot be controlled via the KY-F55's lens connector.
- The use of some lenses may lower the resolution.
- When using lenses other than those specified;
  - Picture angle may vary.
  - Resolution may be reduced.
  - Ghosting, flaring, or shading (color irregularities) may occur.
- Firmly secure the lens. If it is not properly mounted, back focus adjustment will not be accurate.

- **Installing the HZ-610MD or HZ-G6350**

1. Remove the cap from the lens mount. Make sure no dirt or dust enters the mount.
2. Screw the lens clockwise into the lens mount of the KY-F55 until it locks in place.
3. If the lens is turned beyond the point where it locks in position, the mount will slip and start rotating idly.
4. Turn the lens in this slipping idle state and re-adjust the lens position.

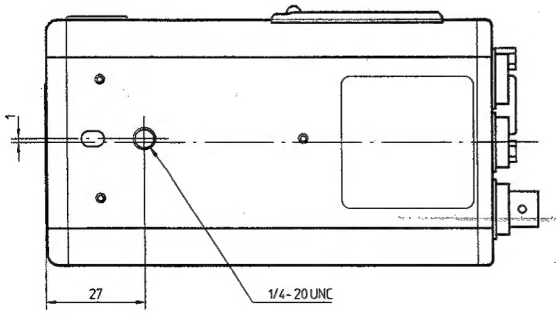


5. Connect the lens cable to the "LENS" connector on the back of the KY-F55.

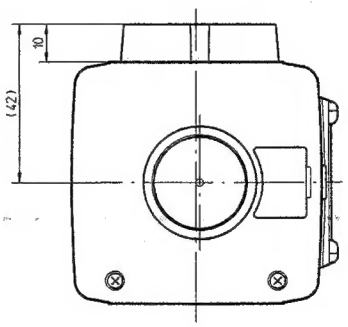
■ Mounting on a tripod stand, fixing unit or pan/tilt unit

- As shown below, a 1/4-inch fixing hole is provided on the bottom of the KY-F55.
- For ceiling installations and other setups requiring top of camera mounting, attach the provided camera mounting bracket to the top of the camera using three screws.
- If the fixing hole on the bottom of the camera cannot be used because an optional lens such as the HZ-610MD is being used, attach the camera mounting bracket to the bottom of the camera and then fix the camera to the tripod, fixing unit, or pan/tilt unit.

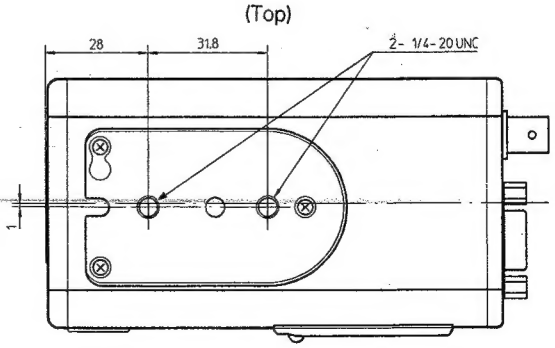
(Bottom)



- Mounting bracket installed on top of the camera.

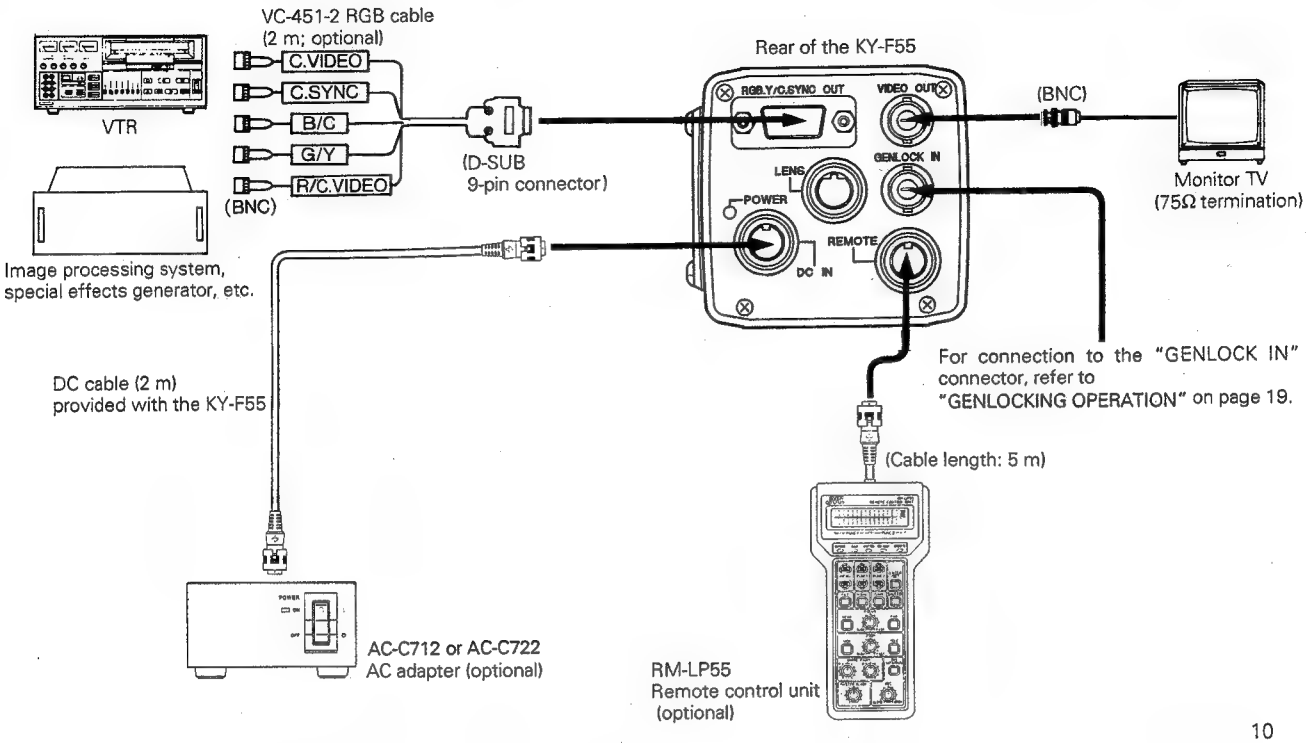


(Top)



CONNECTIONS

- Before making any connections, be sure that any equipment being connected is also OFF.

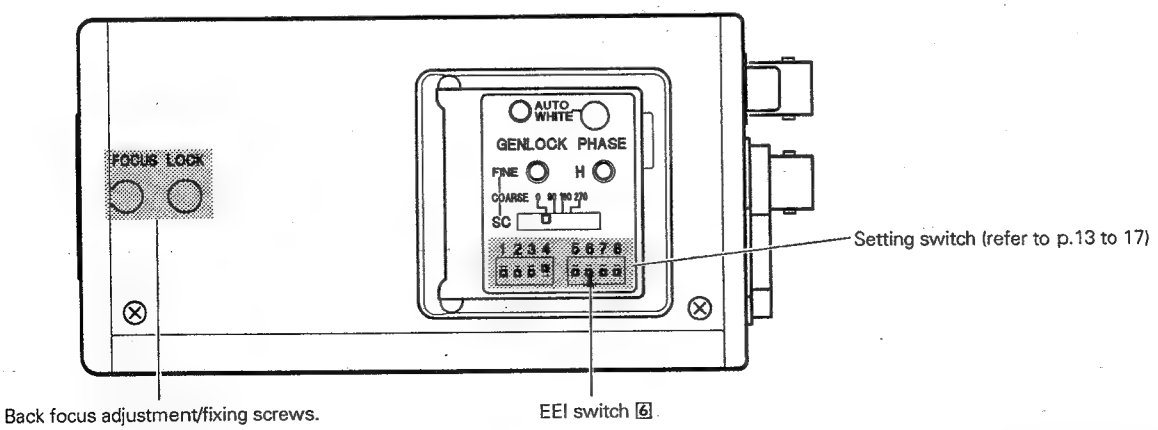


SETUP

To ensure that you get the clearest pictures and correct color tone when shooting, you must first adjust the back focus and white balance.

- Back focus adjustment normally needs to be performed only once — at the time you install the lens. As long as you don't change the lens, subsequent adjustment should not be necessary.
- The white balance must be adjusted each time you shoot.

1. Prior to adjustment, make all necessary connections (see "Connections", p.10), then set the switches and controls of the camera to the factory-preset positions as shown below.
2. Supply a DC 12V from the AC adapter, refer to "Supplying the power" on page 14.



3. Aim the camera at an appropriate subject, operate the lens focus and zoom, and confirm that the picture is satisfactory using a monitor TV.

■ Back focus adjustment

Perform this adjustment while referring to a monitor TV.

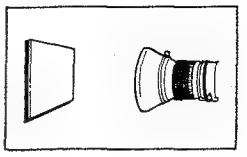
- For more accurate adjustment. the subject and camera should be at least 3 meters apart.
- When using the HZ-610MD or HZ-G6350
  For the adjustment, it is necessary optional RM-LP55.

1. Loosen the back focus fixing screw (LOCK) by turning it counterclockwise with a screwdriver.
2. Open the lens iris.
3. If the illumination is too strong, flip up the EEI switch [6] to ON.
4. *Set the lens' zoom to the maximum telephoto position.*
5. Adjust lens focus.
6. Set the lens' zoom to maximum wide angle.
7. Turn the back focus adjust screw (FOCUS) to the optimum focus.
8. Repeat steps 4 to 7.
9. Turn the back focus fixing screw (LOCK) clockwise to secure it.

■ White balance adjustment

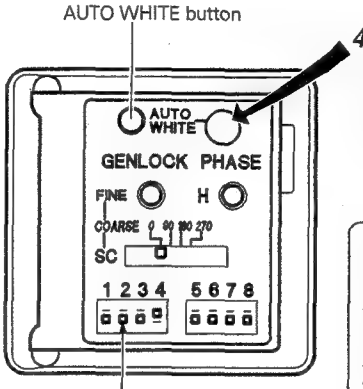
- If the color temperature of the light source (natural light, for example) changes during shooting, the white balance must be readjusted.

1. Flip down the WHITE BALANCE switch [2] to AUTO.
2. Shoot a white subject (white paper, white wall, etc.) so that it fills the whole screen.



3. Press the AUTO WHITE button.

Note:
The preset white paint data will be reset if it was set with the remote control.



4. This LED lights while the auto white balance is adjusting. When the LED goes out, white balance adjustment is complete.

Note:
When the operation indicator LED goes out after flashing, it means that white balance adjustment is incomplete. To fully adjust white balance, insert *a color temperature conversion* filter in front of the lens.

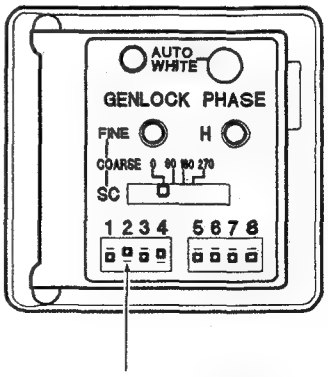
SETUP

■ Full-time auto white balance (automatic color temperature maintenance)

- Full-time auto white balance automatically adjusts white balance if lighting conditions change to maintain optimum balance at all times. (See "Full-time auto white balance", p.23)

1. Flip up the WHITE BALANCE switch [2] to FAW.

Note:
If the overall screen has a mono color tone or a vividly colored subject is shot, white balance may drift. This is not a malfunction. If this happens, adjust white balance again as described in "White balance adjustment", p. 12.

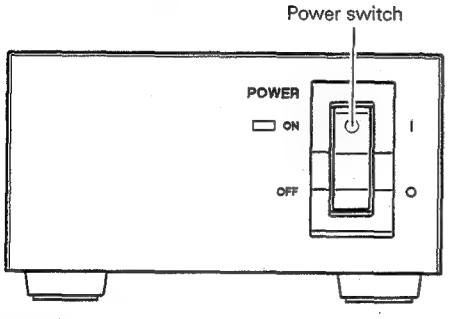


OPERATION

■ Supplying the power

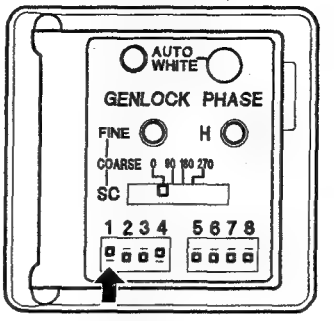
- Use the AC adapter (optional: AC-C712 or AC-C722).

1. After connecting the KY-F55 to the AC adapter, connect the adapter's power plug to a power outlet.
2. Set the AC adapter's power switch to ON.
3. The power indicator LED on both the camera and the AC adapter will light.



Attention:
To protect internal electric circuitry, the KY-F55 incorporates an excessive current detection circuit. If this circuit is activated by a power surge, video signal output will stop. To recover normal status, turn the AC adapter OFF and then turn it ON again.

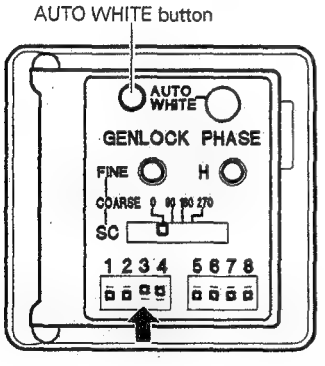
■ Setting up using the remote control unit (only when using the RM-LP55)



1. Flip up the DATA switch [1] to REMOTE.
2. Set the camera operation mode as desired using the remote control and transfer the data to the camera. The set data will be stored in the camera.
   (For details, refer to the RM-LP55's Instructions.)
3. The transferred data remains in the camera's memory even if the remote control is disconnected.

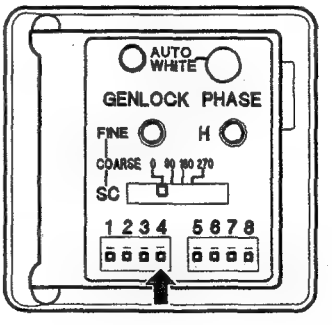
OPERATION

■ Setting the color bars mode/Setup data display



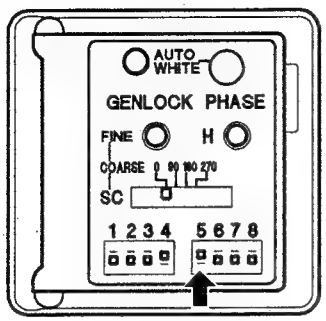
1. Flip up the MODE switch [3] to BARS to output the color bars signal from the video signal output.
2. Press the AUTO WHITE button to display setup data on the monitor.
3. Press it again to turn the display off.

■ Selecting the signal output from the D-SUB connector



1. To output the Y/C signal, flip down the D-SUB OUT switch [4] to Y/C.
   • This switch is factory-preset to the R/G/B signal output.
2. To output the R/G/B signal, flip up the D-SUB OUT switch [4] to RGB.
   (For D-SUB connector specifications, refer to "Connectors" on page 21.)

■ Setting the shutter mode



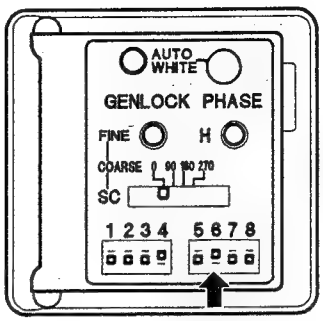
1. To engage the flicker-free mode, flip up the SHUTTER switch [5] to 1/100 (50 Hz regions) for NTSC, or 1/120 (60 Hz regions) for PAL.

2. If the optional RM-LP55 is used, setting is possible up to a maximum of 1/2000 second.

   (Refer to "Operation principle of the electronic shutter" on p.24.)

Note:
If both EEI and SHUTTER are set to ON, EEI has priority.

■ To set to EEI (shutter iris) mode

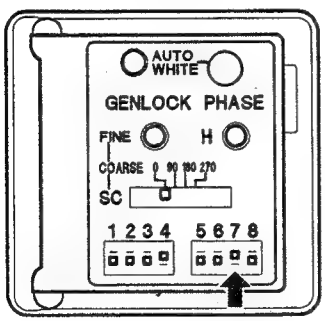


- Flip up the EEI switch [6] to ON.
  (For the detail of EEI, refer to "ALC and EEI operations" on page 23.)

Note:
If the EEI mode is used under a fluorescent lamp, flicker may be generated. In this case, set the EEI switch to OFF.

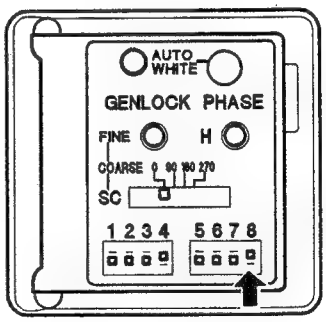
OPERATION

■ To set to the ALC (automatic level control) mode



- Flip up the ALC switch [7] to ON.
  (For the detail of ALC, refer to "ALC and EEI operations" on page 23.)

■ Setting the LENS mode



1. To engage the manual iris mode, flip up the LENS switch [8] to MANUAL. When using a manual iris lens, set to MANUAL.

2. When using an auto iris lens, flip down the switch to AUTO.

■ Optional remote control functions

Function	Operable from KY-F55	Operable from RM-LP55
BARS	ON / OFF	ON / OFF
CONTOUR	X	ON (LEVEL) / OFF
GAMMA	X	ON / OFF
MASTER BLACK	X	O
IRIS	AUTO / MANUAL	AUTO (LEVEL) / MANU
IRIS DETECT	X	NORMAL / PEAK / AVG
WHITE BALANCE	AUTO / FAW	PRESET/MANUAL/AUTO1/AUTO2/FAW
WHITE PAINT	X	O
GAIN	0dB / ALC	0dB / +6dB / +9dB / +12dB / +18dB / ALC / ALC+EEI
SHUTTER (for NTSC)	NORMAL , 1/100 , EEI	NORMAL , 1/100 , 1/250 , 1/500 , 1/1000 , 1/2000 , V. SCAN , EEI
SHUTTER (for PAL)	NORMAL , 1/120 , EEI	NORMAL , 1/120 , 1/250 , 1/500 , 1/1000 , 1/2000 , V. SCAN , EEI
TITLE INDICATION	X	ON / OFF
TITLE INDICATION LOCATION	X	O
TITLE SETTING	X	O
DATA	REMOTE / CAM	X
SAVE (MEMORY)	X	SAVE
D-SUB OUT	Y/C, RGB	X
H. PHASE	O	O
SC COARSE	0° / 90° / 180° / 270°	0° / 90° / 180° / 270°
SC FINE	O	O
ZOOM	X	O
FOCUS	X	O

O : Function available
X : Function not available

GENLOCKING OPERATION

When pictures from more than one camera are to be processed (fade in, fade out, and mix wipe), by a special effects generator (SEG), genlocking is used to synchronize the various camera pictures with the SEG. In the example below, a simplified method which does not require the use of measuring instruments is described. Here, an SEG is genlocked to the KY-F55 which acts as the main signal source.

- H and SC phase can be adjusted from optional RM-LP55 (remote control unit).

1. Set the MODE switch [3] to BARS, and output the color bars signal.

2. Set the SEG's built-in color bars signal to the SEG's program output. (Refer to the SEG's Instructions.)

■ Adjusting horizontal sync phase

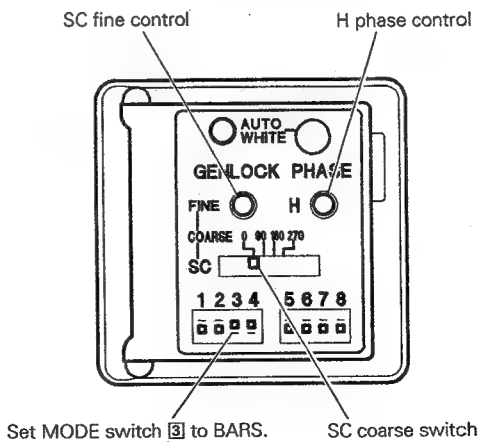
3. While monitoring the SEG's program output on the underscan monitor TV, alternately switch between the SEG's built in color bars and the KY-F55's color bars on the program bus, then turn and adjust the horizontal phase adjustment control so that the horizontal phase of the two color bars does not drift.

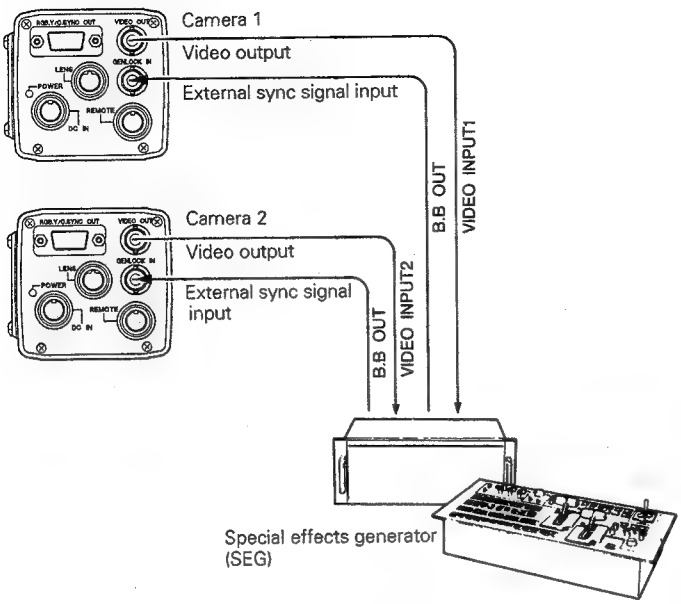
■ Adjusting the SC phase

- In the same way as in horizontal sync phase, perform adjustment so that the color phase of the SEG's built- in color bars and that of the KY-F55's color bars match each other.

4. Perform coarse adjustment using the SC coarse switch (0°, 90°, 180° and 270°).

5. Perform fine adjustment by turning the SC fine control.





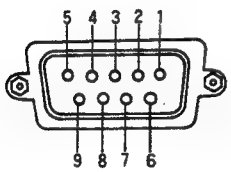
Notes:

- If a vector scope and a waveform monitor are available, these adjustments can be performed accurately.
- A VTR playback signal cannot be used as a sync signal. Be sure to use a TBC (time base corrector).
- Be sure to use an underscan monitor as a monitor.

CONNECTORS

■ D-SUB connector

(9-pin, female)

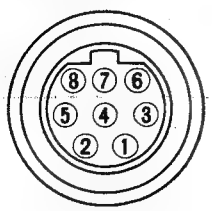


(Viewed from front)

Pin No.	Signal (R/G/B signal selected)	Signal (Y/C signal selected)
1	Ground	Ground
2	Ground	Ground
3	R (RED) signal output	Composite video signal output
4	G (GREEN) signal output	Y signal output
5	B (BLUE) signal output	C signal output
6	Composite video signal output	Composite video signal output
7	Composite sync signal output	Composite sync signal output
8	Ground	Ground
9	Ground	Ground

■ Lens connector

(8-pin, female)

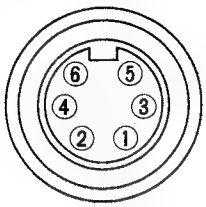


(Viewed from front)

Pin No.	Signal
1	IRIS mode select
2	Ground
3	IRIS control
4	+12 V DC output
5	—
6	ZOOM control
7	FOCUS control
8	Y signal output

■ Remote connector

(6-pin, female)

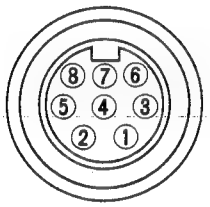


(Viewed from front)

Pin No.	Signal
1	Ground
2	OPERATE
3	Ground
4	+9 V DC output
5	SID2
6	SID1

■ DC input connector

(8-pin, female)



(Viewed from front)

Pin No.	Signal
1	—
2	Ground
3	—
4	—
5	Ground
6	+12 V DC input
7	—
8	+12 V DC input

TECHNICAL INFORMATION

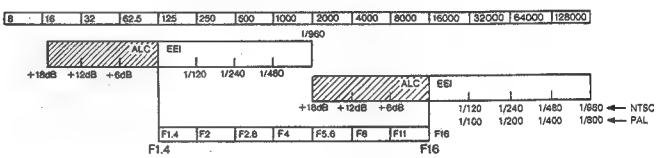
■ ALC and EEI operations

ALC refers to automatic level control and EEI to shutter iris control. The video circuit of the KY-F55 employs a system that maintains the video level at a constant level through a combination of the lens's auto iris, continuously variable electronic shutter (EEI), and automatic level (sensitivity) control circuit (ALC).

In low-light conditions, the automatic level control circuit is activated while, in brighter light, the electronic shutter operates. Moreover, if the iris is set to auto, the sensitivity, iris, and electronic shutter will all vary continuously to automatically ensure the optimum signal level at all times.

In the ALC mode, sensitivity (gain) is increased between 0 dB and +18 dB. In the EEI mode, the electronic shutter automatically operates at a range from 1/60 to 1/960 second : for NTSC, 1/50 to 1/800 second : for PAL depending on the strength of the lighting. This means that in dark conditions, the signal level will be adjusted by 3 stops of the iris whereas in bright situations, it will be adjusted by a range of 4 stops. If the iris is manually set, the sensitivity and electronic shutter will vary continuously while the iris setting remains the same. The advantage of this is that it allows you to shoot in situations where illumination changes without changing the depth of field.

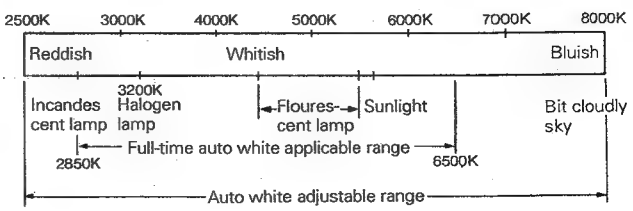
Illumination: lux



■ Full-time auto white balance

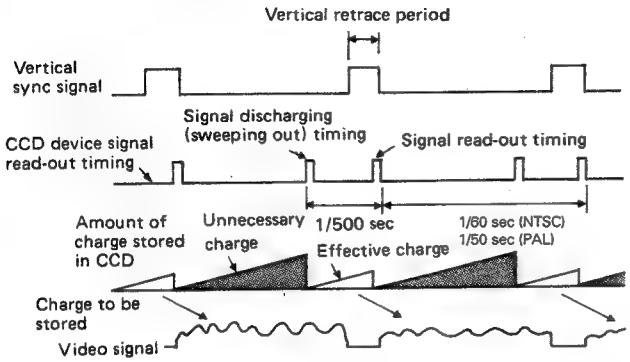
Full-time auto white balance is a function which automatically and continuously adjusts white balance as necessary. In some cases — such as when there is a single color on the screen, when the subject is wearing a vivid color, or when the color temperature of the light source changes — correct white balance may not be obtained. If this occurs, we recommend you adjust the white balance by referring to "White balance adjustment" on p.12.

Color temperature



■ Operation principle of the electronic shutter (Example: 1/500 sec)

Electric charge is stored in a CCD image device for only 1/500 second before the signal is read out from the CCD device and the electric charges stored prior to that are discharged (swept out) in order to achieve a shutter speed of 1/500 second.



Cautions in the use of the electronic shutter mode

- The motion of the subject will be seen as strobescopic motion on the monitor TV screen as a 1/500 second picture is extracted every 1/60 second : for NTSC, 1/50 second : for PAL.
- As the storage time of the CCD device is decreased to approximately 1/8, the drop in the amount of light will be by a factor of 1/8 of that in the normal mode. In shooting, it is necessary to increase the illumination by 8 times or increase light intensity by opening the lens aperture by 3 stops if there is sufficient light.
- As flicker results under a periodic lighting such as a fluorescent lamp, it is necessary to use lighting which is free from excessive periodic changes such as an incandescent lamp.

SPECIFICATIONS

Pickup device	: 1/3-inch interline CCD × 3
Effective number of pixels	: 380,000 pixels (for NTSC) 440,000 pixels (for PAL)
Color separation optical system	: F1.4, RGB 3-color separation prism
Lens mount	: C-mount
Color system	: wideband R-Y, B-Y encoder
Sync system	: Internal/external
Sensitivity	: F5.6, 2000 lux
S/N ratio	: NTSC : 60 dB (typical), PAL : 58 dB (typical)
Horizontal resolution	: 750 TV lines (Y signal) 580 TV lines (R/G/B signal)
Registration	: 0.05 % (excluding lens characteristics)
Contour correction	: Horizontal; dual-edged Vertical; single-edged
Electric gain	: +18 dB (ALC)
Electronic shutter speed	: NTSC : Normal (1/60 sec), 1/100 sec PAL : Normal (1/50 sec), 1/120 sec
External sync signal input	: Composite video signal 1 V(p-p), 75 ohm or black burst signal 0.43 V(p-p), 75 ohm
Color bars	: Built-in SMPTE-type color bars signal (NTSC) Built-in full-type color bars signal (PAL)

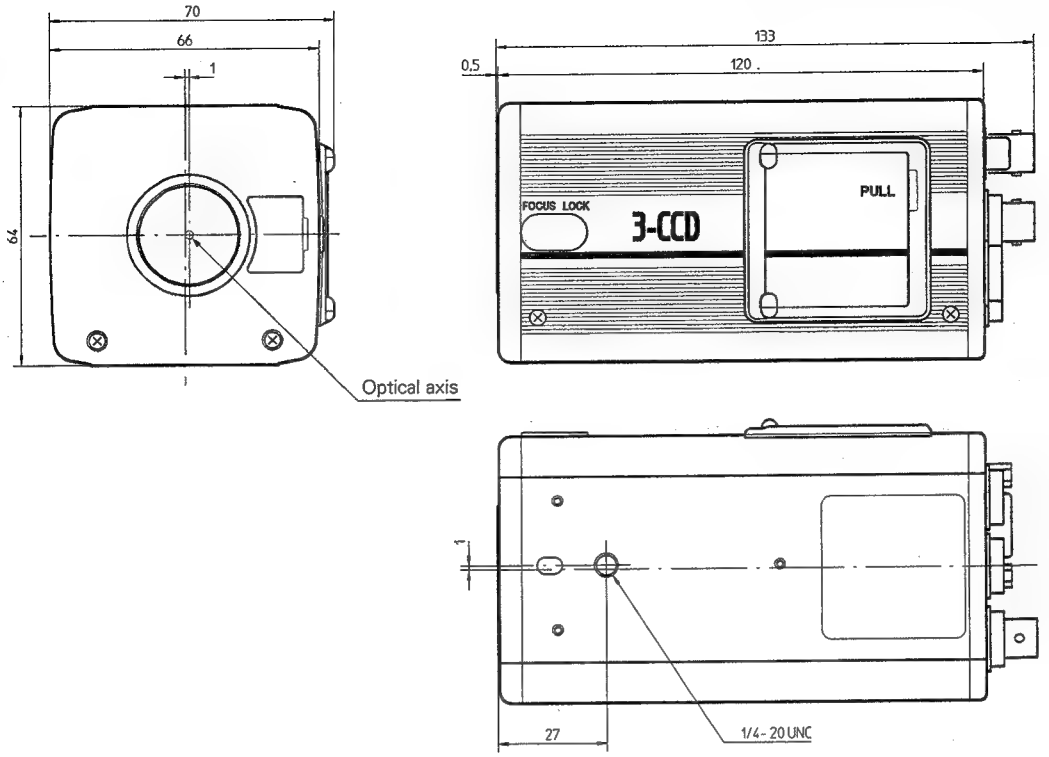
Cautions on installation

Although the calculative intensity of illumination is 15 lux, at least 40 to 50 lux is required as practical illumination. Make sure to secure 40 to 50 lux on installation.

Output signals	
• Composite video signal	: 1 Vp-p, 75 ohm BNC connector one channel, D-SUB 9-pin connector one channel
• Y/C signal	Y : 1 Vp-p, 75 ohm (including sync) C : 0.286 Vp-p, 75 ohm (burst) : for NTSC 0.3 Vp-p, 75 ohm (burst) : for PAL D-SUB 9-pin connector one channel (switchable between R/G/B signal)
• R/G/B signal	: 0.7 Vp-p, 75 ohm (without sync) each D-SUB 9-pin connector one channel (switchable between Y/C signal)
• Composite sync signal	: 2 Vp-p, 75 ohm D-SUB 9-pin connector one channel
Lens connector	: Applicable to the HZ-610MD, HZ-G6350
Remote connector	: Applicable to the RM-LP55
Power supply	: 12 V DC (10.5 to 15 V)
Power consumption	: 7.1 W
Ambient temperature range	: –5°C to 40°C (23°F to 104°F)
Weight	: 490 g
Accessories	: DC cable VC462-2 (2 m) x 1 Camera mounting bracket × 1 Screw (CM46969-00B) × 3

Design and specifications are subject to change without prior notice.

■ Dimensions (unit: mm)



VICTOR COMPANY OF JAPAN, LIMITED
CAMERA SYSTEMS DIVISION

SC96648
Printed in Japan

SECTION 1
SERVICE CAUTIONS AND DISASSEMBLY

1.1 CARD FIT CABLE CONNECTION

- Take care of the connecting side of the card fit cable. Insert the card fit cable so as to contact the copper leaf on its edge to the connector's conductive surface as shown in Fig. 1-1.
- For disconnecting the card fit cable (flat cable), pull the cable stoppers in the direction of the arrows. To secure the connection of the card fit cable, push the cable stoppers in the reverse direction of the arrows after inserting the cable.

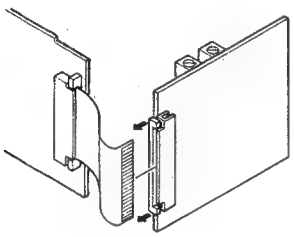


Fig. 1-1

1.2 REMOVAL OF COVER

Remove four screws ① from the both sides of the cover Ⓐ to take it off.

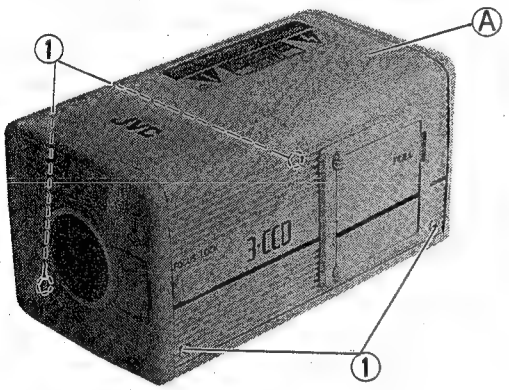


Fig. 1-2

1.3 REMOVAL OF CIRCUIT BOARDS

Remove the cover Ⓐ according to the subsection 1.2.

1.3.1 Removal of board holder

1. Remove eight screws ②, then remove the holder Ⓑ.

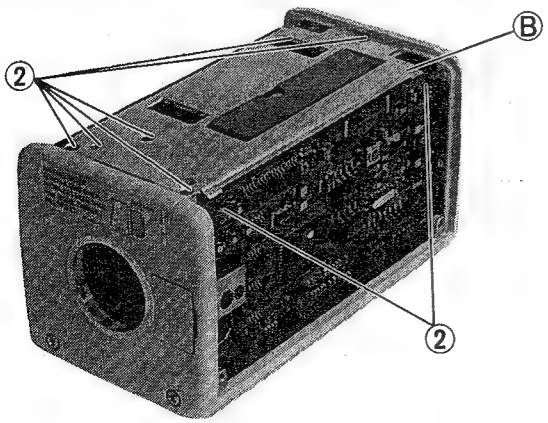


Fig. 1-3

1.3.2 Removal of plug-in circuit board

1. The circuit boards named PR, CE, SG and CP with DET which are located on the MT board. Pull out these circuit boards upward and remove them.

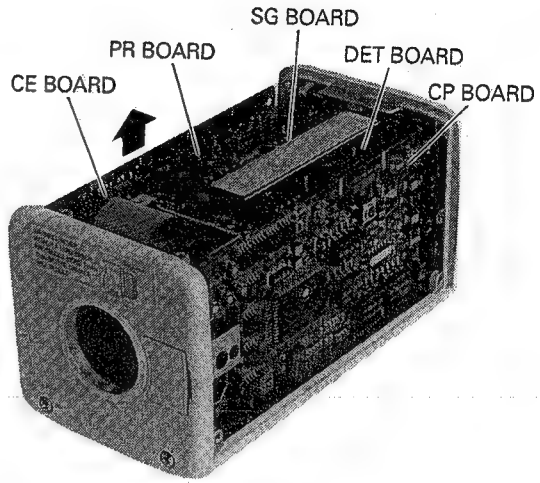


Fig. 1.4

Note: DET board is connected on the CP board. Pull out the DET board together with the CP board.

1.3.3 Removal of IF board

1. Remove two screws ③ from the rear panel, and pull the IF board rearward together with the rear panel out of the MT board.

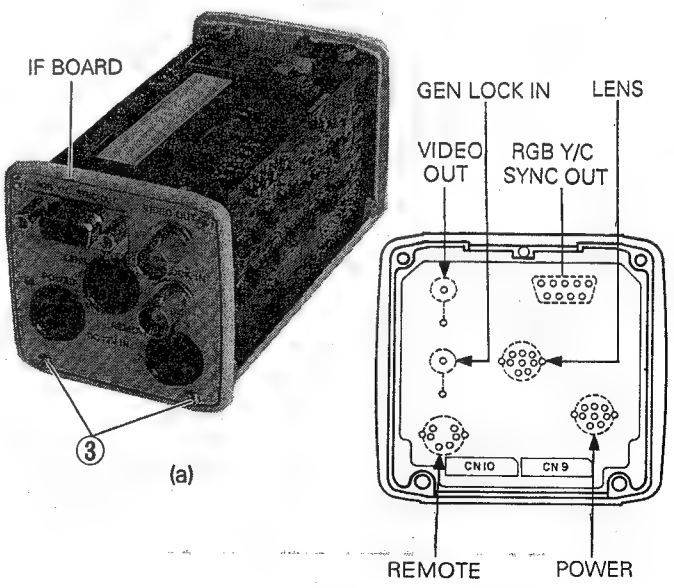


Fig. 1-5

2. Unsolder the connector at the points shown in Fig. 1-5(b).

1.3.4 Removal of DR board

1. Remove two screws ④ from the front panel.

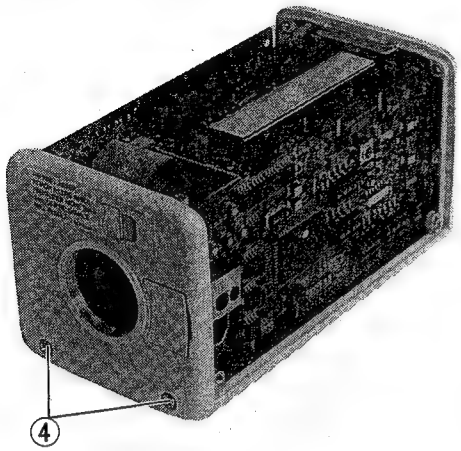


Fig. 1-6

2. Remove two screws ⑤ from the DR board to remove the board.

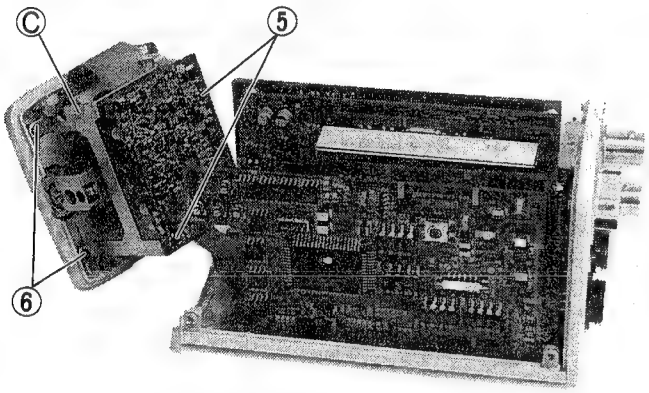


Fig. 1-7

1.4 REMOVAL OF FRONT PANEL

1. Remove two screws ④ from the front panel.
2. Remove two screw ⑥ retaining the DR board bracket Ⓒ.
3. Remove the plate Ⓓ from the front panel with a screwdriver.

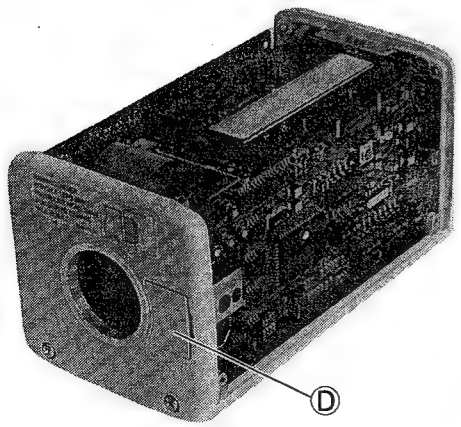


Fig. 1-8

4. Remove two screw ⑦, and the optical block assembly can be removed from the front panel. (The front panel is removed together with the quartz filter assembly.)

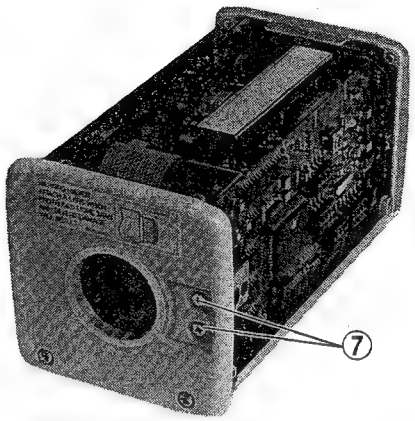


Fig. 1-9

1.5 DET BOARD

The DET board is connected with a connector (CN100) on the CP board. For servicing, remove the DET board from the CP board once, and again install the DET board as it is turned at an angle of 90° as shown in Fig. 1-10. At that time, use a servicing connector CN102 for the connector CN100 to connect it with the CP board.

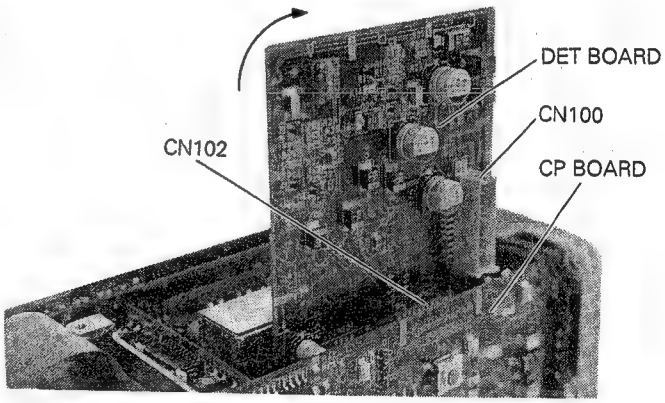


Fig. 1-10

1.6 IS board

The IS board is assembled with the CCD in a set. Although the assembly is removable by disconnecting it from the IC socket, do not remove it to prevent the registration from getting abnormal. For disconnecting the FPC cable, do it from the connector of the DR board. When replacing the FPC cable, be most careful not to apply unreasonable force to the board.

Resetting of the software system

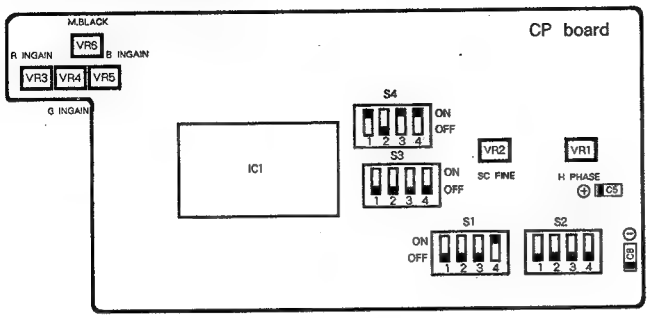
The information on the RM-LP55 written in the internal memory of the camera can be reset in the following manner.

Press the AUTO WHITE switch of the camera while turning on the AC-C712 or the AC-C722.

1.7 FUNCTIONS OF CAMERA'S INTERNAL SWITCHES

Respective functions of internal switches of the camera are as follows.

1.7.1 Initial settings at shipment from factory



When the camera's AUTO WHITE switch is pressed as the camera is set in the Color Bars mode, the camera status memorized in the camera is displayed in the monitor screen by the RM-LP55 as shown by the following example.

Example of display

DATA	:	REMOTE
GAIN	:	+18dB
SHUTTER	:	1/2000
WHITE BAL	:	MANUAL
〈RCH : +30	BCH : −30〉	
A.IRIS DETECT	:	+99
A.IRIS LEVEL	:	PEAK
CONTOUR LEVEL	:	+55
M.BLACK LEVEL	:	−20

1.7.2 Table of switch functions

DIP SW			Name	OFF	ON
Setting for user's option	S1	1	DATA	CAM	REMOTE
		2	WHITE BAL	AUTO	FAW
		3	MODE	CAM	BARS
		4	D-SUB OUT	Y/C	R G B
	S2	1	SHUTTER	NORMAL	FLICKER LESS
		2	EEI	OFF	ON
		3	ALC	OFF	ON
		4	LENS	AUTO	MANUAL
Setting for check and adjustment	S3	1	CHECK MODE1	OFF	ON
		2	CHECK MODE2	OFF	ON
		3	MODEL*	KY-F55	—
		4	HI-RESO*	OFF	—
	S4	1	SELECT	B MODE	A MODE
		2	SYNC RESET*	OFF	—
		3	GAMMA	OFF	ON
		4	CC	OFF	ON

Note: Set the * mark switches to the OFF position to avoid malfunction.

1.7.3 Function in CHECK mode

MODE 1	MODE 2	MODE	Description
OFF	OFF	Normal mode	
ON	OFF	Adjust mode	M. BLK = standard
OFF	ON	S/N check mode	CC = OFF, GAMMA = OFF, M.BLK = 90mVp-p (NTSC), 45mVp-p (PAL)

Notes:

- In Adjust mode, S2-3 functions to switch input gain (0 dB/+18 dB).
- In Adjust mode, the H. PHASE control functions as the IRIS control.

1.7.4 Function in SELECT mode

S4-1	MODE		EEI	V.SCAN	ALC
ON	A	NTSC	NOR. – 1/948.8	NOR. – 1/2074.7	0dB – +18dB
		PAL	NOR. – 1/798.1	NOR. – 1/2061.8	
OFF	B	NTSC	NOR. – 1/247.7	NOR. – 1/247.7	0dB – +12dB
		PAL	NOR. – 1/206.7	NOR. – 1/249.7	

1.7.5 DIP switches to be set to OFF

Set the following switches to the OFF position to avoid malfunction.

1. If the RM-LP55 is operated as S3-3 (MODEL) is set on, there occur some changes in the display and operation as mentioned below.
   In MENU display:
   [9: RANDOMTRIGGER]
   (Display only with nothing of operation)
   [10: HI-RESO]
   (The camera enters the high resolution mode however the video dynamic range is nearly half the normal. Moreover, this mode may cause abnormal white balance depending on camera subject and shooting condition.)
   In SHUTTER display:
   [SLOW SHUTTER]
   Do not use this setting since the picture appears flickering, because this camera is not equipped with any video processing circuit. Consequently, this setting cannot be utilized for slow shutter operation.)
   In GAIN display:
   [LOLUX]
   In this setting, the camera does not enter the LOLUX mode but enters the +18dB gain mode.
2. When S3-4 (HI-RESO) is set to ON, the high resolution mode is activated, however, the video dynamic range is nearly half the normal.
   This setting requires your careful attention since it may cause abnormal white balance depending on camera subject and shooting condition.
3. S4-2 (SYNC RESET)
   If S4-2 is set to ON, the RESET function is not activated by external sync signal input in pixel reading.

1.8. MOUNTING LENS ON THE CAMERA

When mounting the HZ-610MDU motorized 10x zoom lens or the HZ-G6350U variable focal lens onto the camera, pay careful attention to its mounting posture as illustrated below, since each of them is mechanically limited in the mounting posture (lens's vertical orientation) for the reason of the dynamic shading characteristic improvement.
Pay careful attention to the lens posture when mounting it onto the camera, otherwise it causes uneven coloring for the reason of chromatic aberration.

1.8.1 To mount HZ-610MDU on the camera

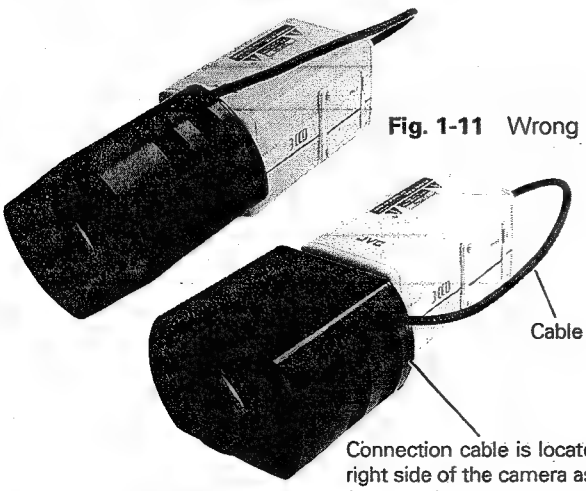


Fig. 1-11 Wrong

Fig. 1-12 Good

1.8.2 To mount HZ-G6350U on the camera

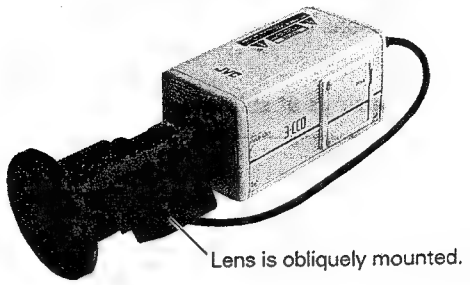


Fig. 1-13 Wrong

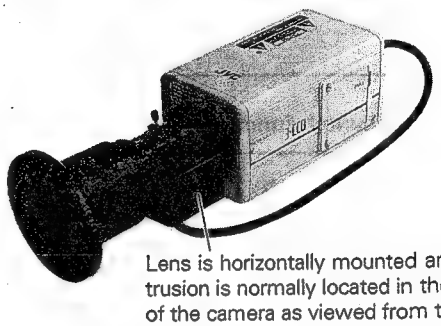


Fig. 1-14 Good

1.9 ATTENTIONAL PERFORMANCES

The following phenomena, that may sometimes occur in opertion, are not faulty but in the specifications.

1. Vertical black and white lines appear in the left side of the picture as a result of damages in the trailing edges of the H. blanking pulse.

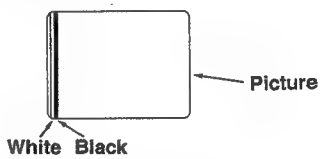
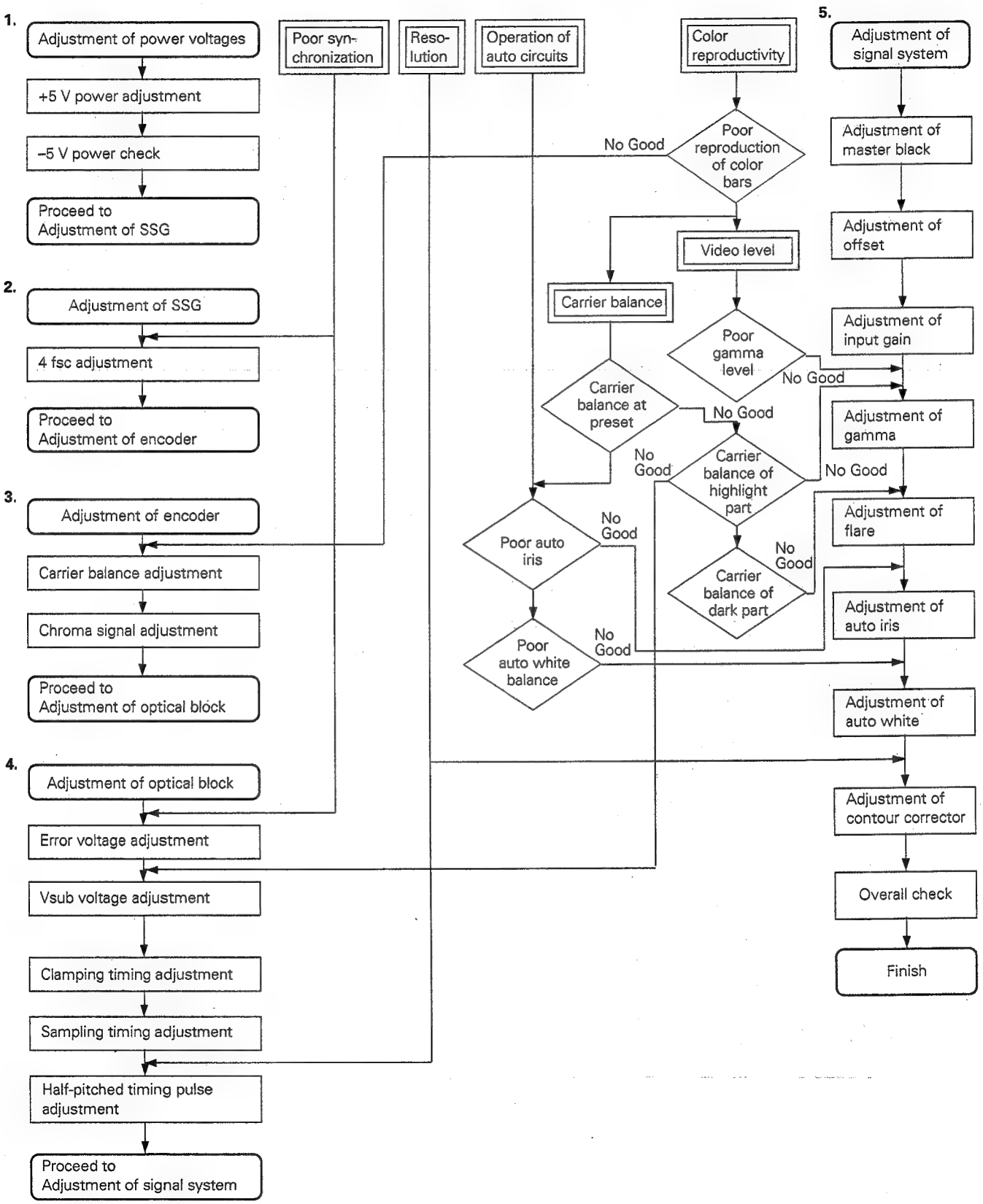


Fig. 1-9-1

2. Horizontal noise appear in the picture.
3. Video level steppedly changes for the reason that the iris does not operate smoothly owing to the characteristic of the lens (galvanometer).
4. When black burst signal is not used as the genlock signal but video signal is used, there are horizontal black lines or beats appearing in the picture.
5. Horizontal noise appears in the picture during the camera is operated by the remote control unit.
6. Color bars signal cannot be used for adjustment of special effect devices since its waveform swells.
7. When the source voltage instantaneously drops down, the circuit protector is actuated and the power supply inside the camera will be cut off even after the voltage recovers to the specified level. In that event, turn off the power switch once, and again turn it on to supply the power.
8. H. contour is not horizontally symmetric.
9. White dot appear in the picture as a result of irregular output of pixel of the CCD. This phenomenon is called lack of pixel, which results from the peculiarity of the CCD.

SECTION 2
ELECTRICAL ADJUSTMENTS

2.1 FLOWCHART OF ELECTRICAL ADJUSTMENTS



2.2 REQUIRED EQUIPMENT FOR ELECTRICAL ADJUSTMENT

2.2.1 General instruments necessary for adjustment

1. Oscilloscope (capable of measuring on 100 MHz or higher band, moreover, must be calibrated)
2. Vectorscope (must be calibrated)
3. Frequency counter (readable eight-digit number and stable with tolerance of 0.1 ppm or 1×10^{-7} at 0°C to 40°C, more-over, must be calibrated)
4. Digital voltmeter (having 10 MΩ or more input impedance, moreover, must be calibrated)
5. Color video monitor

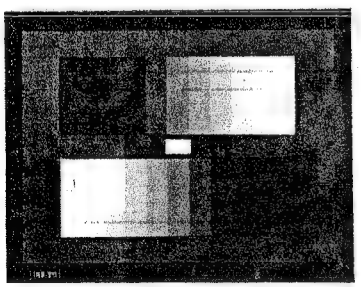
2.2.2 Special implements for electrical adjustments

1	Extension board

24-pin : Part No. SCV2463-024 x 2
14-pin : Part No. SCV2463-014 x 1

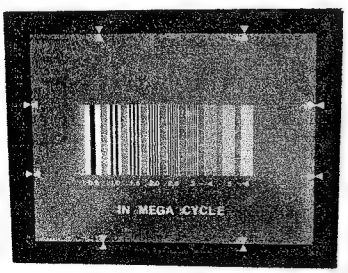
2	Gray scale chart

< Part No. GS2L >



3	In-megacycle chart

< Part No. RESC-010 >



2.2.3 Other necessities

1. Power supply :12 V DC
   (AC power adapter AC-712 (U-Ver), AC-C722 or AC-C724 (E-Ver) available)
2. Camera lens : HZ-610MD, HZ-G6350

NOTE

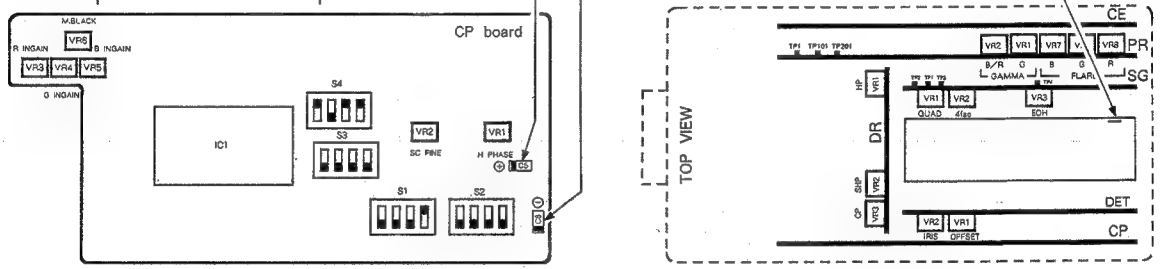
1) For power supply to this camera, use the power cable CE41155-002 (8-pin plug) supplied as a service part to do it from a 12 V DC power source, or use the power cable VC-462-2 to supply from the AC power adapter AC-C710.
2) The HZ-610MD lens, if it is used, needs the remote control unit RM-LP55.
3) Usable lenses are limited to those whose screw base protrudes beyond the mounting socket of the camera within 4 mm inside the camera body.
   Lenses whose protrusion inside the camera body is more than 4 mm are not mountable, since the lens base touches the optical filter inside the camera.

No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (ⓣ) Adjustment level (☆)	Adjustment procedure

2.3 ADJUSTMENT OF POWER VOLTAGES

- When power supply voltage is different from the value specified below, adjust it according to the following procedure.

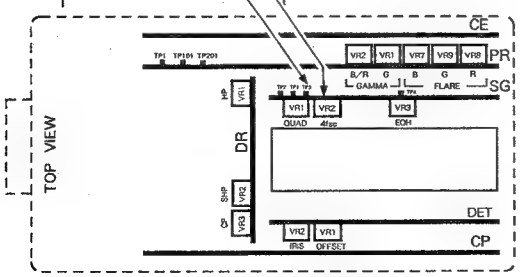
1	+5 V power adjustment	• Digital voltmeter	◎ C5 (+) [CP] ⓣ +5 V ADJ (VR1) [DC-DC converter] ☆ +5 V ± 0.05 V	1) Adjust the VR through the adjustment hole of the DC-DC converter to obtain the specified voltage. 2) Make sure of the voltages.
2	–5 V power check		◎ C8 (–) [CP] ☆ –5 V ± 0.2 V	



2.4 ADJUSTMENT OF SSG

- Make sure to warm up the camera for more than 15 minutes before adjustment.
- Use a frequency counter readable four-digit number.

1	4 fsc adjustment	• Frequency counter	◎ TP3 [SG] ⓣ 4 fsc (VR2) [SG] ☆ 14.318180 MHz ± 20 Hz (NTSC) 17.734475 MHz ± 20 Hz (PAL)	1) Adjust the VR to obtain the specified frequency.

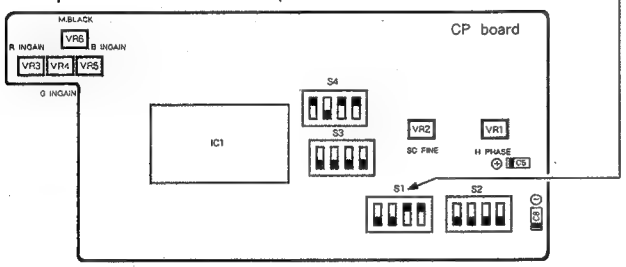


No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (Ⓣ) Adjustment level (☆)	Adjustment procedure

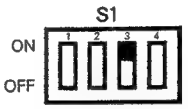
2.5 ADJUSTMENT OF ENCODER

- When intending to adjust the following items without a vectorscope, perform the adjustment of Item No. 2 "Adjustment of carrier balance" only.
- This camera is not equipped with the Y LEVEL, SYNC LEVEL, SETUP LEVEL and BURST LEVEL controls.

1 Preparation



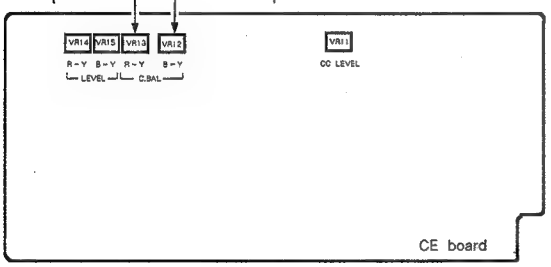
1) Set the MODE switch (S1-3) on the CP board to ON (upper) position to output the color bars signal.
2) Connect an oscilloscope to the VIDEO OUTPUT terminal with a 75 Ω terminator.



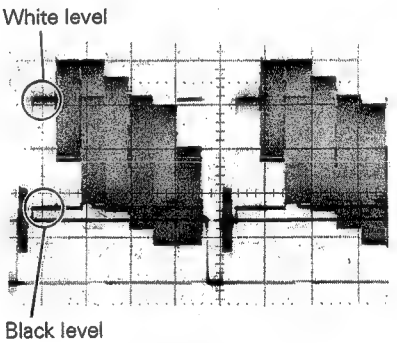
2 Carrier balance adjustment

- Oscilloscope (H-rate, 10 : 1) or Waveform monitor (WFM)
- Color bars output

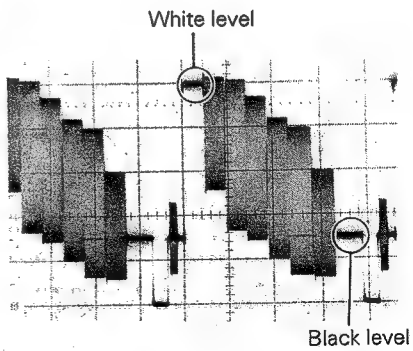
◎ VIDEO OUTPUT terminal (with 75 Ω terminator)
Ⓣ R-Y C. BAL (VR13) [CE]
Ⓣ B-Y C. BAL (VR12) [CE]



1) Turn VR13 and VR12 alternately to minimize carrier leak in the white and black components.

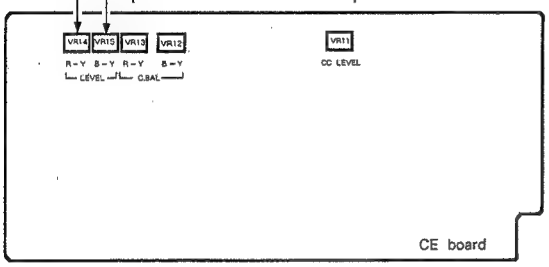


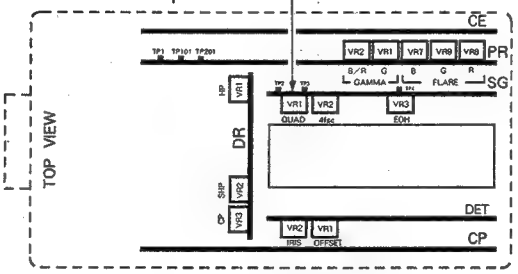
[NTSC]

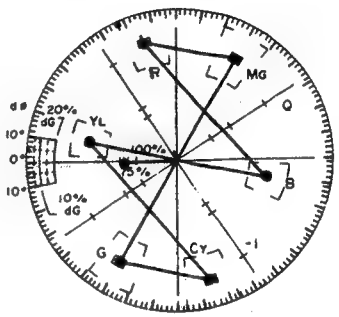


[PAL]

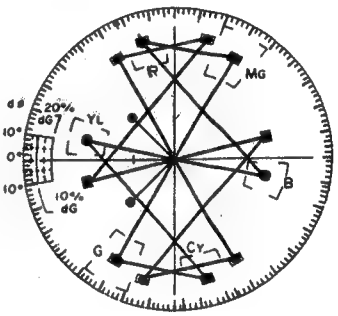
No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (ⓣ) Adjustment level (☆)	Adjustment procedure
3	Chroma signal adjustment	• Vectorscope • Color bars output	◎ VIDEO OUTPUT terminal (with 75 Ω terminator) ⓣ R-Y LEVEL (VR14) [CE] ⓣ B-Y LEVEL (VR15) [CE] ⓣ QUAD (VR1) [SG]	1) Set a vectorscope's GAIN control to the CAL or 75 % (preset) position. 2) Adjust the VRs to locate every spot (R, G, B, Mg, Cy YL) at the respectively specified point on the vectorscope screen.







[NTSC]



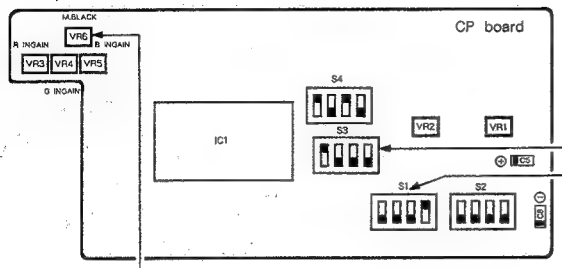
[PAL]

No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (ⓣ) Adjustment level (☆)	Adjustment procedure

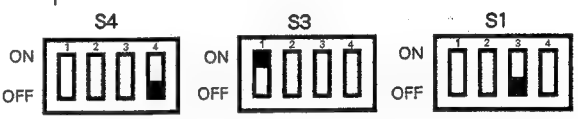
2.6 ADJUSTMENT OF MASTER BLACK

1 Preparation

- Lens capped



1) Set the CHECK MODE switch (S3-1) on the CP board to the ON (upper) position to enter the set into the Adjust mode.
2) Set the MODE switch (S1-3) on the CP board to the OFF (lower) position to enter the set into the CAM mode.
3) Set the CC switch (S4-4) ON the CP board to the OFF (lower position).

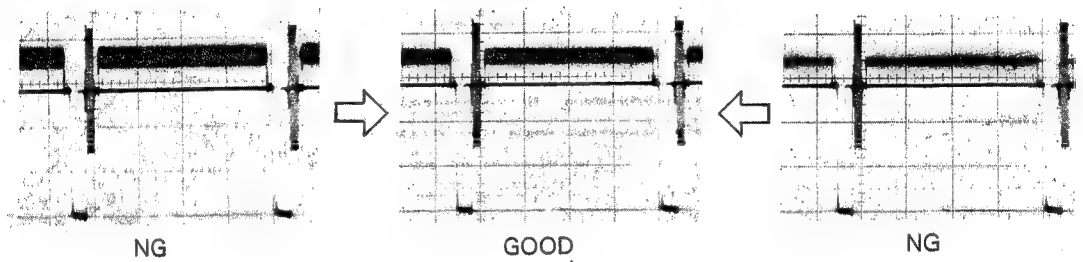


2 Master black adjustment

- Oscilloscope (H-rate, 10 : 1)
- Lens capped

◎ VIDEO OUTPUT terminal (with 75Ω terminator)
ⓣ M. BLACK (VR6) [CP]
☆ Noise and blanking accord with each other by respective centers.

1) Adjust the VR so that half of video noise is absorbed in the blanking period.

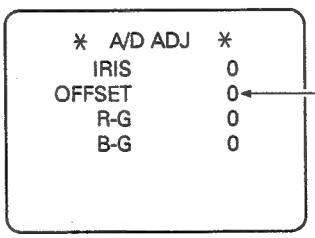


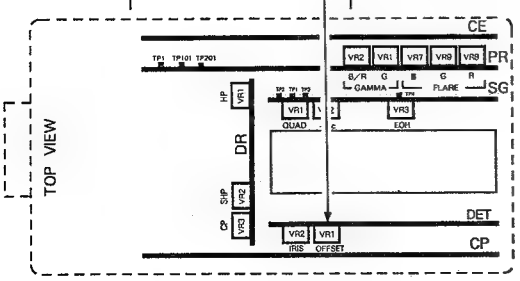
3 Offset adjustment

- Lens capped (black shade)

◎ Monitor screen
ⓣ OFFSET (VR1) [DET]
☆ Indication of OFFSET = 0

1) Close the lens completely with the lens cap.
2) Adjust the VR so that the indication of the "OFFSET < VR1 >" value appearing in the monitor screen becomes "0" (zero).



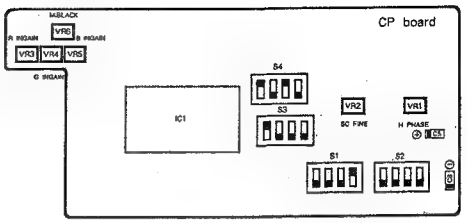


No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (ⓣ) Adjustment level (☆)	Adjustment procedure

2.7 ADJUSTMENT OF INPUT GAIN

NOTES:

- When the CHECK MODE1 (S3-1) switch on the CP board is set to ON, the H. PHASE control (VR1) on the CP board functions as the MANUAL IRIS control. Before adjusting VR1, take note of its setting position since it must be returned to the original position after completion of all the adjustments.
- Lighting conditions must be as follows.
  1) The lens iris is opened nearly half (set at the midpoint between OPEN and CLOSE) with 100% signal level.
  2) Illumination is uniform on the gray scale chart.
- After this section, leave the set in the ADJUST MODE (CHECK MODE1 switch ON) until the subsection 2.11 "Adjustment of contour corrector" is completed.
- After this section, leave the iris setting as it is until the subsection 2.9 "Adjustment of auto iris" is completed. (Neither disturb the IRIS control nor apply any shock to it without reason.)
- When the HZ-610MD lens is used, turn off the switch S3-1 once and adjust the angle of view by the RM-LP55.



Connect an oscilloscope to the VIDEO OUTPUT terminal and adjust lighting so that video signal is observed flat at the V-rate.

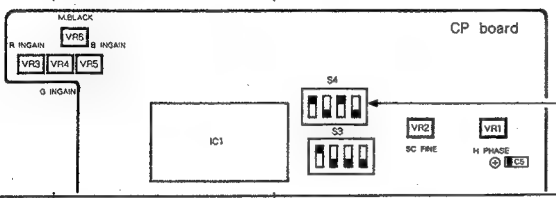
1	Iris setting	• Oscilloscope (H-rate, 10 : 1) • Gray scale chart (Just scan)	◎ TP201 [PR] ⓣ Lens iris ☆ 0.16 Vp-p	1) Adjust the H. PHASE control (VR1) on the CP board to obtain the specified level. (When S3-1 is set to ON, the iris control is adjustable.)
2	G-ch input gain adjustment	• Oscilloscope (H-rate, 10 : 1) • Gray scale (Just scan)	◎ VIDEO OUT terminal (with 75Ω terminator) ⓣ G INGAIN (VR4) [CP] ☆ 0.7 Vp-p (NTSC) ☆ 0.686 Vp-p (PAL)	1) Set the GAMMA switch (S4-3) on the CP board to OFF (lower position) to set the gamma to 1 (OFF). 2) Adjust the white peak level of the gray scale chart to the specified value.
3	R/B input gain adjustment	• Oscilloscope (H-rate, 10 : 1) • Gray scale (Just scan)	◎ VIDEO OUT terminal (with 75Ω terminator) ⓣ B INGAIN (VR5) [CP] ⓣ R INGAIN (VR5) [CP] ☆ Minimum carrier leak	1) Minimize carrier leak in the white peak of the video signal.

No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (ⓣ) Adjustment level (☆)	Adjustment procedure

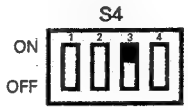
2.8 ADJUSTMENT OF VIDEO LEVEL

- This adjustment must follow the subsection 2.7 "Adjustment of Input Gain". Make sure that the "Adjustment of Input Gain" has been carried out perfectly.

1 Preparation



1) Set the GAMMA switch (S4-3) on the CP board to ON (upper position).

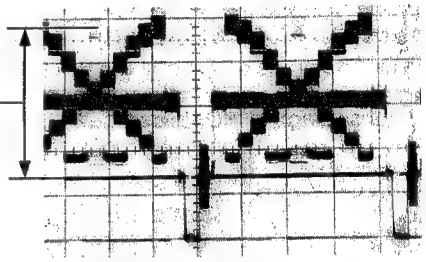


2 G-ch gamma adjustment

- Oscilloscope (H-rate, 10 : 1)
- Gray scale chart (Just scan)

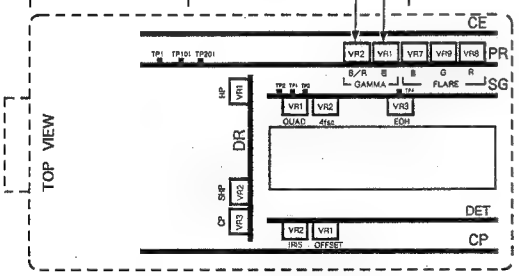
◎ VIDEO OUTPUT terminal (with 75 Ω terminator)
ⓣ G GAMMA (VR1) [PR]
☆ 0.7 Vp-p (NTSC)
☆ 0.686 Vp-p (PAL)

1) Adjust the VR to set the white peak level of video signal nearly to the specified level (for the reason of carrier contained).



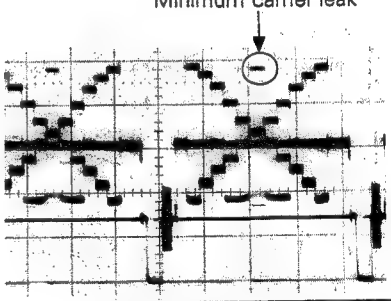
3 B- & R-ch gamma adjustment

◎ VIDEO OUTPUT terminal (with 75 Ω terminator)
ⓣ B /R GAMMA (VR2) [PR]
☆ Minimum carrier leak



1) Alternately repeat the adjustments of this step and the step before several times so that both the white peak and cross point of the video signal get to the specified levels with minimum carrier leak.

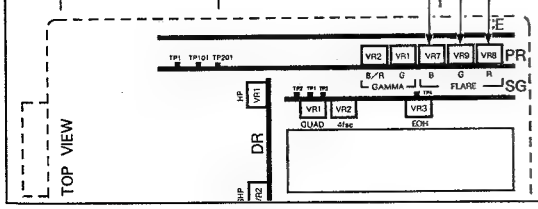
Minimum carrier leak



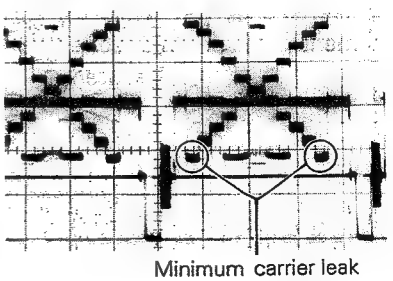
4 Flare level adjustment

- Oscilloscope (H-rate, 10 : 1)
- Gray scale chart

◎ VIDEO OUTPUT terminal (with 75Ω terminator)
ⓣ B FLARE (VR7) [PR]
ⓣ G FLARE (VR9) [PR]
ⓣ R FLARE (VR8) [PR]
☆ 80 mV (NTSC)/40 mV (PAL) at gray scale's 1st step with min. carrier leak



1) Adjust the G FLARE control so that the highest level of noise in the first step (from the black) of the gray scale is 80 mV (NTSC)/40 mV (PAL).
2) Minimize carrier leak with the B FLARE and R FLARE controls.

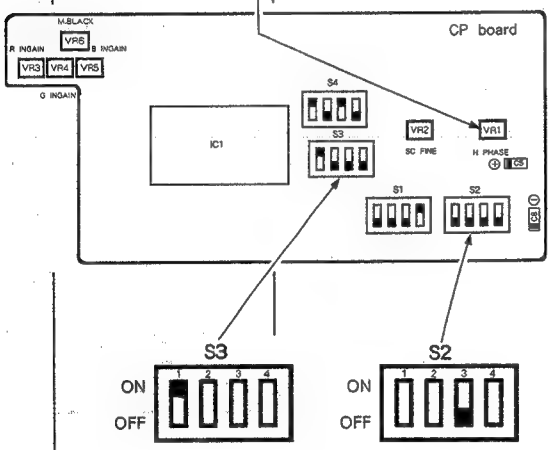


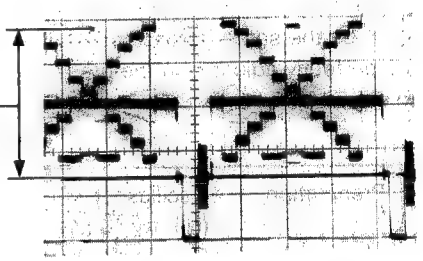
No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (ⓣ) Adjustment level (☆)	Adjustment procedure

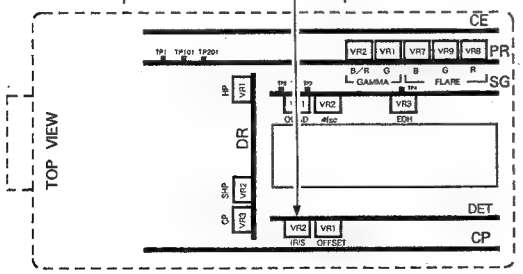
2.9 ADJUSTMENT OF AUTO IRIS

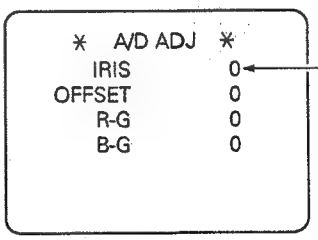
- Proceed to this subsection after confirming that video level is correctly adjusted by the previous subsections 2.7 and 2.8.
- The following adjustment should be performed with the CHECK MODE1 switch (S3-1) set to ON (upper position).
- When the HZ-610MD or the HZ-G6350 lens is mounted, adjust the iris with the H. PHASE control.
- The following adjustment should be performed with 0 dB gain. (Set the ALC switch [S2-3] switch on the CP board to OFF (lower position).

1	Preparation	• Oscilloscope (H-rate, 10 : 1) • Gray scale chart (Just scan)	◎ VIDEO OUTPUT terminal (with 75 Ω terminator) ⓣ Lens iris ☆ 0.7 Vp-p (NTSC) ☆ 0.686 Vp-p (PAL)	1) Set video level to the specified value with the lens iris (or with the H. PHASE control when HZ-610MD or HZ-G6350 lens is mounted).
2	Iris number adjustment		◎ Monitor screen ⓣ IRIS (VR2) [DET] ☆ Iris number : 0 (zero)	1) Adjust the IRIS control so that the IRIS number appearing in the monitor screen becomes "0" (zero).







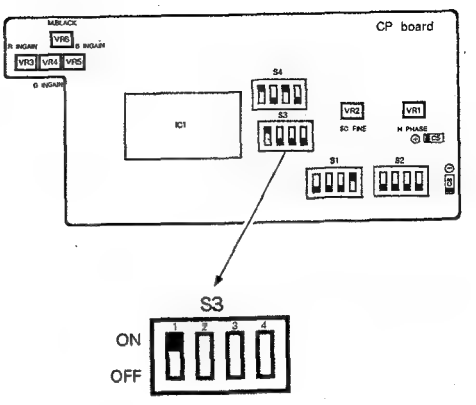


No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (ⓣ) Adjustment level (☆)	Adjustment procedure

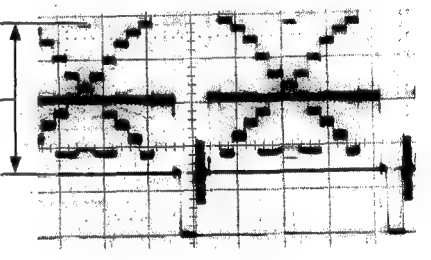
2.10 ADJUSTMENT OF AUTO WHITE

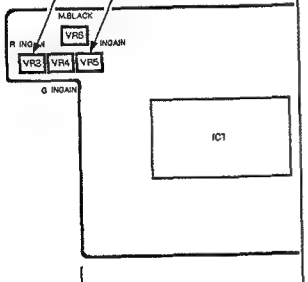
NOTES:

- Proceed to this subsection after confirming that video level is correctly adjusted by the previous subsections 2.7 and 2.8.
- The following adjustments should be performed with the CHECK MODE switch (S3-1) set to ON (upper position).
- This camera is not equipped with any control for auto white adjustment. Auto white (R-G, B-G) is set simultaneously with the adjustment of input gain.
- In the CHECK mode, levels (B-G, R-G) detected from R, G and B channels are indicated in the monitor screen. In this auto white adjustment, the CPU functions to accord detected levels of B and R channels with that of the G channel. Therefore, detected levels of respective channels must be the same to each other when white balance and black balance are perfectly adjusted in the preset mode. The purpose of this section is to equalize those levels.



1	Preparation	• Oscilloscope (H-rate, 10 : 1) • Gray scale chart (Just scan)	◎ VIDEO OUTPUT terminal (75 Ω terminator) ⓣ Lens iris ☆ 0.7 Vp-p (NTSC) ☆ 0.686 Vp-p (PAL)	1) Adjust the video level as specified.
2	Auto white adjustment		◎ Monitor screen ⓣ R INGAIN (VR3) [CP] ⓣ B INGAIN (VR5) [CP] ☆ R-G & B-G numbers : 0 (zero)	1) Adjust the VRs so that the numbers of R-G and B-G appearing in the screen become "0" (zero).





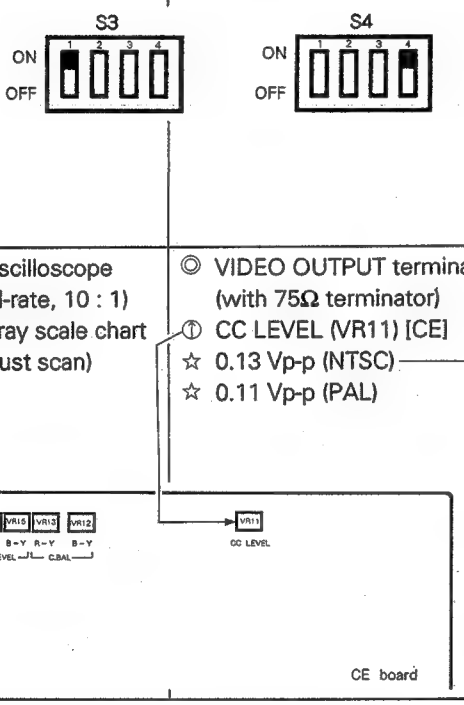
* A/D ADJ *	
IRIS	0
OFFSET	0
R-G	0
B-G	0

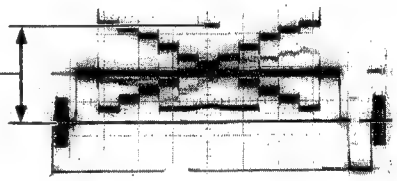
No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (ⓣ) Adjustment level (☆)	Adjustment procedure

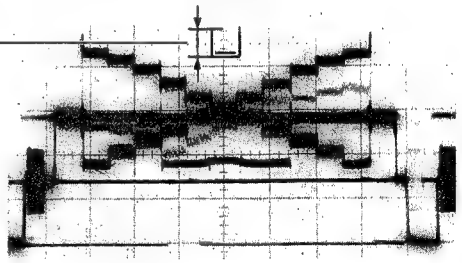
2.11 ADJUSTMENT OF CONTOUR CORRECTOR

- Proceed to this subsection after confirming that video output level is correctly adjusted by the previous subsections 2.7 and 2.8.
- Set the CC switch (S4-4) on the CP board to ON (upper position).

1	Preparation	• Oscilloscope (H-rate, 10 : 1) • Gray scale chart (Just scan)	◎ VIDEO OUTPUT terminal (with 75 Ω terminator) ⓣ Lens iris ☆ 0.57 Vp-p (NTSC) ☆ 0.55 Vp-p (PAL)	1) Set the CHECK MODE1 switch (S3-1) on the CP board to ON (upper position). 2) Set the CC switch (S4-4) on the CP board to ON (upper position). 3) Adjust the H. PHASE control (VR1) on the CP board to set the video output level as specified.
2	H. contour	• Oscilloscope (H-rate, 10 : 1) • Gray scale chart (Just scan)	◎ VIDEO OUTPUT terminal (with 75Ω terminator) ⓣ CC LEVEL (VR11) [CE] ☆ 0.13 Vp-p (NTSC) ☆ 0.11 Vp-p (PAL)	1) When the white peak level of the waveform of the gray scale chart is 0.57 Vp-p (NTSC) 0.55 Vp-p (PAL), adjust the CC LEVEL control so that the contour level of the white peak becomes as specified.



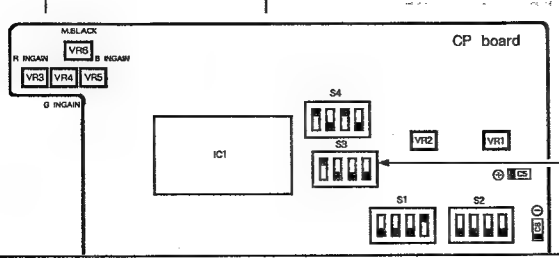




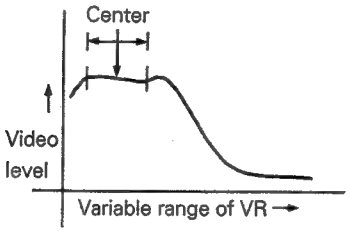
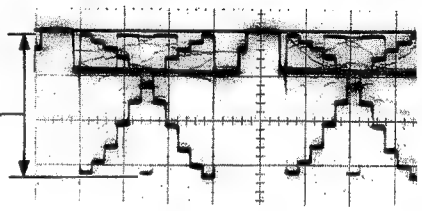
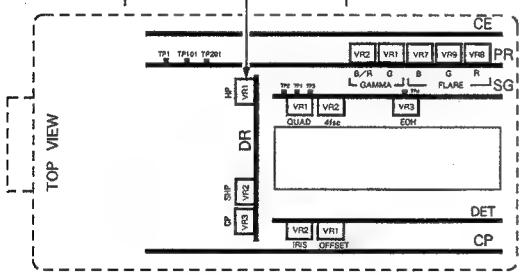
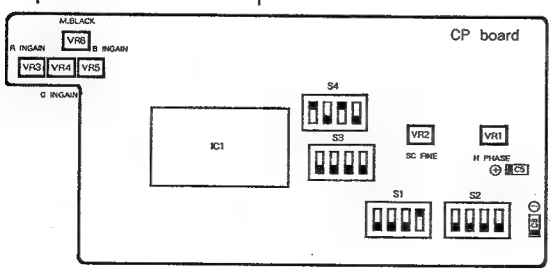
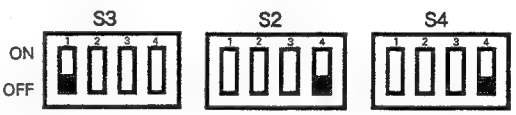
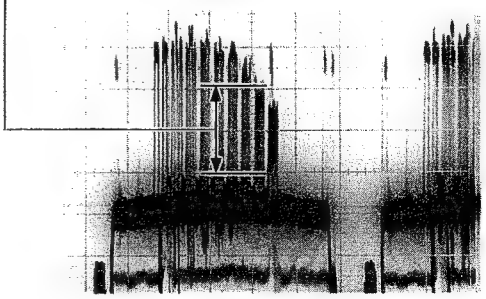
2.12 ADJUSTMENT OF CCD DRIVER AND TIMING GENERATOR

- The adjustments described in this subsection are not generally required even after the optical block is replaced. Therefore, please note that the following are just reference for adjustment when there is a control (controls) disturbed without reason.
- When the HZ-610MD or HZ-G6350 lens is mounted, set the CHECK MODE1 switch (S3-1) to ON (upper position) beforehand for the reason that incident light is set to be of the specified quantity by manual iris operation for the following adjustments.
- Extend the CP board by two 24-pin extension boards (SCV2463-024). (Refer to 2.2.2 Special implements for electrical adjustments.)

1	Preparation			1) Make sure that every switch on the CP board is set to the normal position. 2) Set the CHECK MODE1 switch (S3-1) on the CP board to ON (upper position) to get the iris into the variable condition.



No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (ⓣ) Adjustment level (☆)	Adjustment procedure
2	Error voltage adjustment	• Digital voltmeter	◎ TP4 [SG] ⓣ EOH (VR3) [SG] ☆ +2.5 V DC	1) Adjust the voltage as specified.
3	Vsub voltage adjustment	• Oscilloscope (H-rate, 10 : 1) • Gray scale chart (Just scan)	ⓣ G Vsub (VR5) [DR] ☆ Full counterclockwise position ◎ TP201 [PR] ⓣ Lens iris ☆ 0.5 Vp-p • G-channel ◎ TP201 [PR] ⓣ G Vsub (VR5) [DR] ☆ Just before white level is clipped at 0.5 Vp-p • B-channel ◎ TP1 [PR] ⓣ B Vsub (VR4) [PR] ☆ Just before clipping of white level • R-channel ◎ TP101 [PR] ⓣ R Vsub (VR6) [DR] ☆ Just before clipping of white level	1) Turn VR5 full counterclockwise to release the blooming suppression voltage. 2) Adjust the lens iris so that the white peak of the gray scale waveform is of the specified level. 3) Adjust VR5 so that is it set to the position just before the white peak is clipped at the specified level. 4) In the same manner as for the G-channel, adjust VR4 (B-ch) and VR6 (R-ch) respectively to set them at the position just before the white peak is clipped at the specified level.
4	Sample holding timing adjustment		ⓣ SHP (VR2) [DR] ☆ Full counterclockwise position	1) Set the SHP control to the full counterclockwise position.

No.	Item	Measuring instruments & Input signals	Measuring point (◎) Adjustment parts (ⓣ) Adjustment level (☆)	Adjustment procedure
5	Clamping timing	• Oscilloscope (H-rate, 10 : 1) • Gray scale chart (Just scan)	◎ TP201 [PR] ⓣ CP (VR3) [DR] ☆ Center position corresponding to the center of maximum and stable range of video level 	1) Adjust the iris (H. PHASE VR) to obtain 100 % video output level. 2) Adjust VR2 so that the white peak of the gray scale waveform is maximum and stable as the VR is set nearly to the center of its variable range. 
6	Half-pitched sampling timing adjustment	• Oscilloscope (H-rate, 10 : 1) • In-megacycle chart	◎ VIDEO OUTPUT terminal (with 75 Ω terminator) ⓣ HP (VR1) [DR] ☆ Full resolution  	• Set the CHECK MODE1 switch (S3-1) on the CP board to OFF (lower position) to enter the set into the USER mode. • Set the LENS switch (S2-4) on the CP board to OFF (lower position) to set the lens to the AUTO mode. • Set the CC switch (S4-4) on the CP board to OFF (lower position) to turn off the contour corrector.  1) Shoot the in-megacycle chart. 2) Observe the frequency characteristic and adjust the VR to maximize the level of the high component.  3) Reset the switches mentioned above to the original (normal) position. 4) Reset the H. PHASE control to the original position.

SECTION 3
CHARTS AND DIAGRAMS

■ SCHEMATIC DIAGRAM NOTES

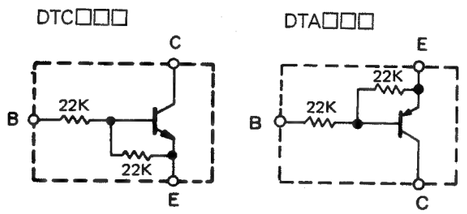
● Schematic safety precaution

⚠ Parts are safety related parts.
When replacing them, be sure to use the specified parts.

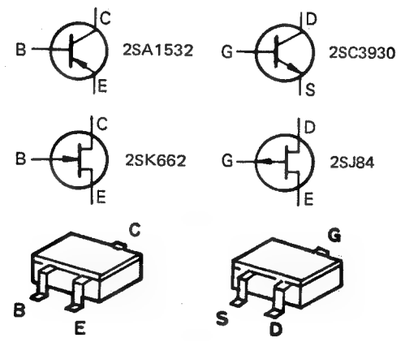
Voltage and waveform measurements.
Voltage: Measured with digital voltmeter in DC range; iris closed.
Waveform: Grey scale illuminated at more than 4000 lux at 3200 K lighting.

● Terminal logic
Top bar of terminal name show input or output logic.
Top bar shows, the control circuit become active at negative (low) logic input for example.

● Digital transistors



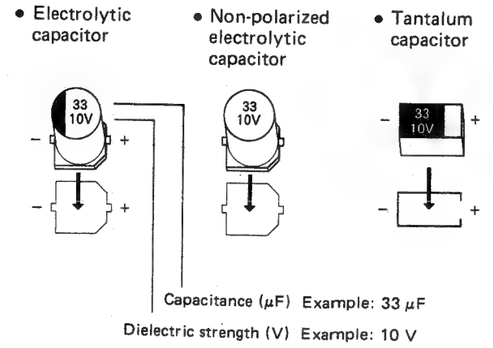
● Transistors and F.E.T.s are:



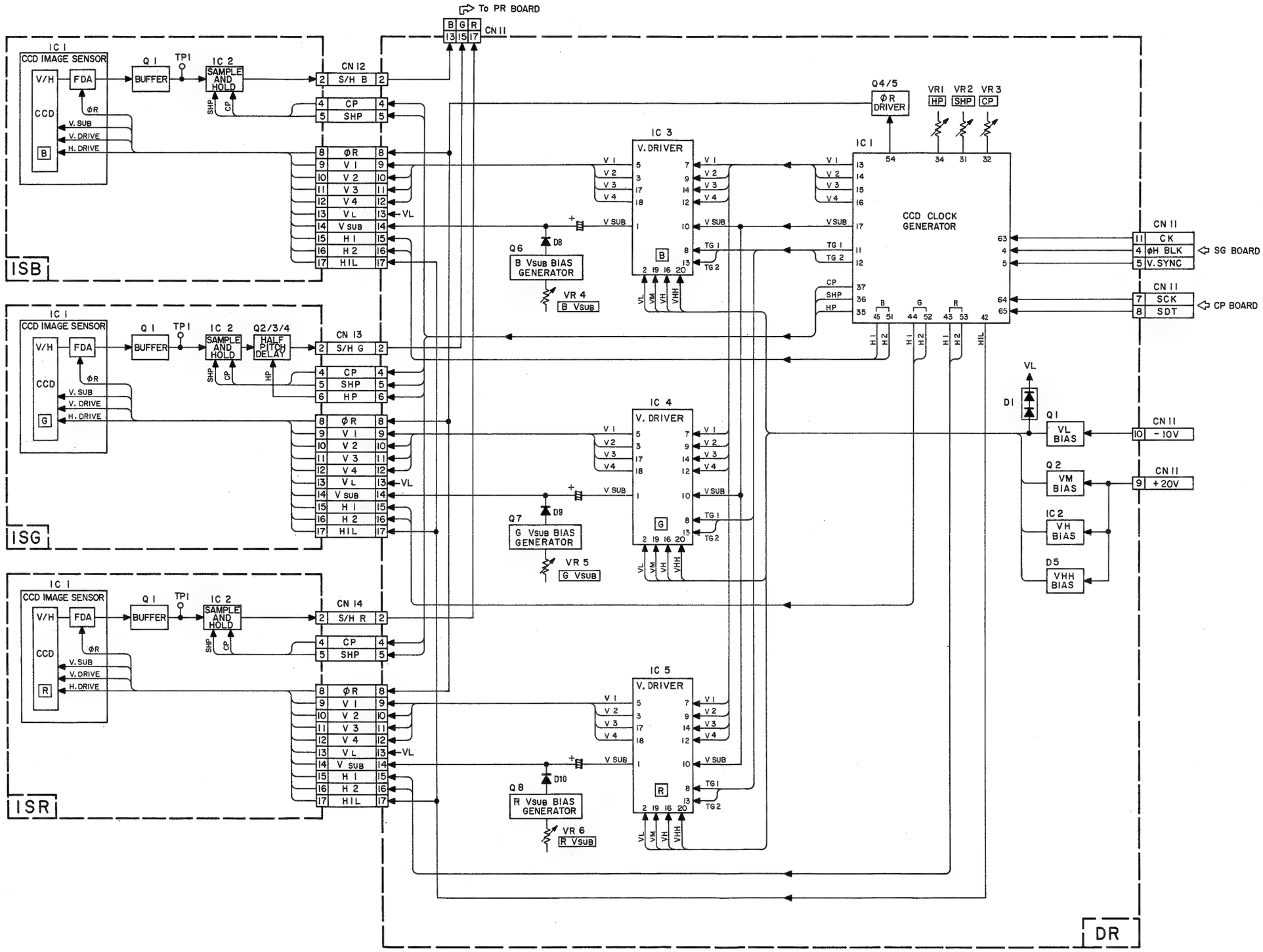
● Definistion of the (A) and the (B) or circuit boards diagrams
(A) : Side on which discrete parts are assembled
(B) : Side on which only chip parts are assembled.

■ REPLACING SUBMINIATURE "CHIP" PARTS

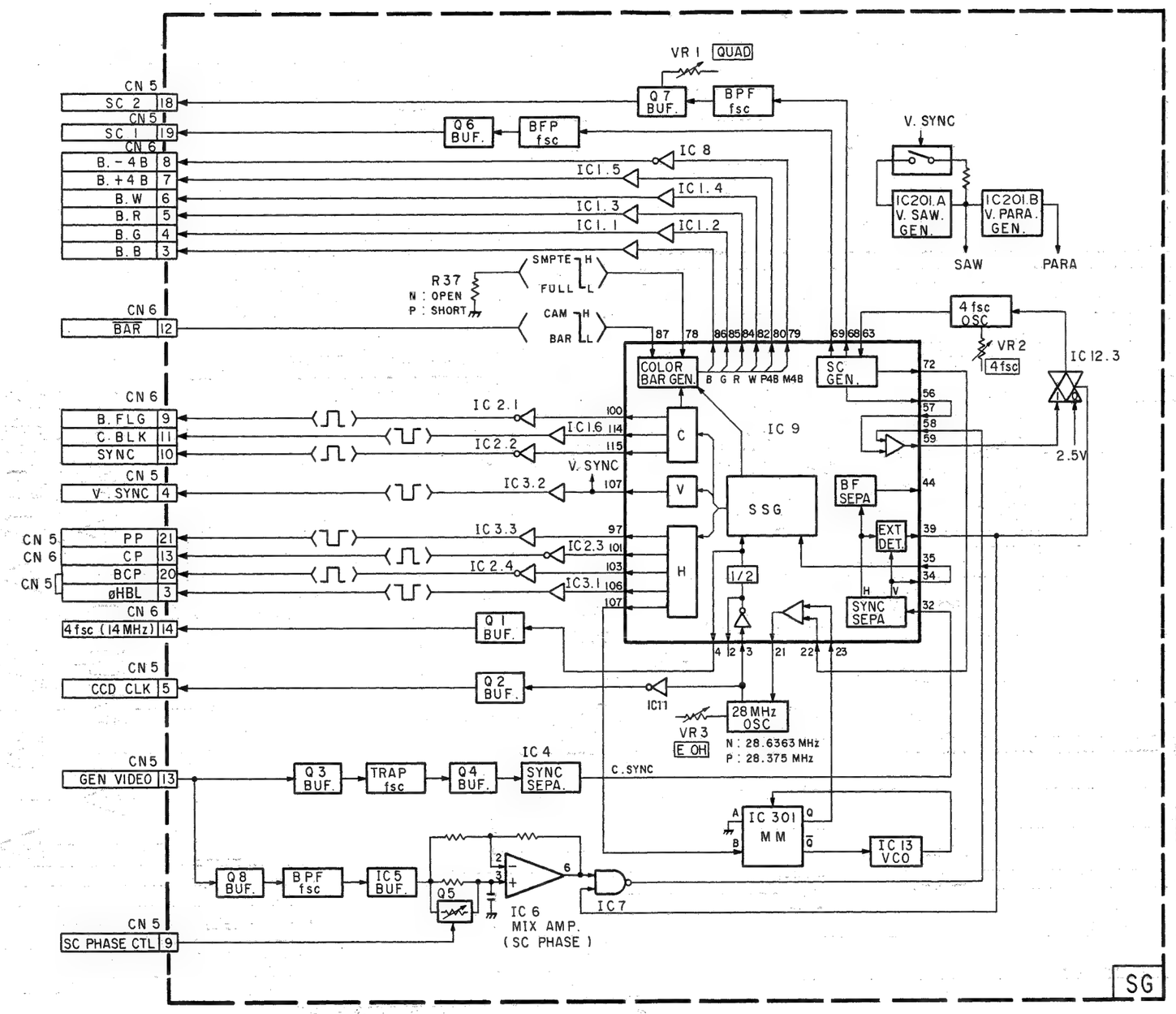
- Some resistors, shorting jumpers (0 Ω resistance), ceramic capacitors, transistors, and diodes are chip parts. These chip parts cannot be reused after they are once removed.
- Chip resistors used in some circuits are of high precision type having little error in resistance.
  To demonstrate the full capacity of this camera head, place an order for proper parts referring to the diagrams and parts lists in the sections 5.
- Soldering cautions:
  1) Do not apply heat for more than 3 seconds.
  2) Avoid using a rubbing stroke when soldering.
  3) Discard removed chips; do not reuse them.
  4) Supplementary cementing is not required.
  5) Use care not to scratch or otherwise damage the chips.
- Polarities of chip electrolytic capacitors and chip tanntalum capacitors used in this model are as illustrated below.
  Polarties indicated by silk-screen printing on circuit boards are also shown below. When replacing such parts, make sure of polarities.



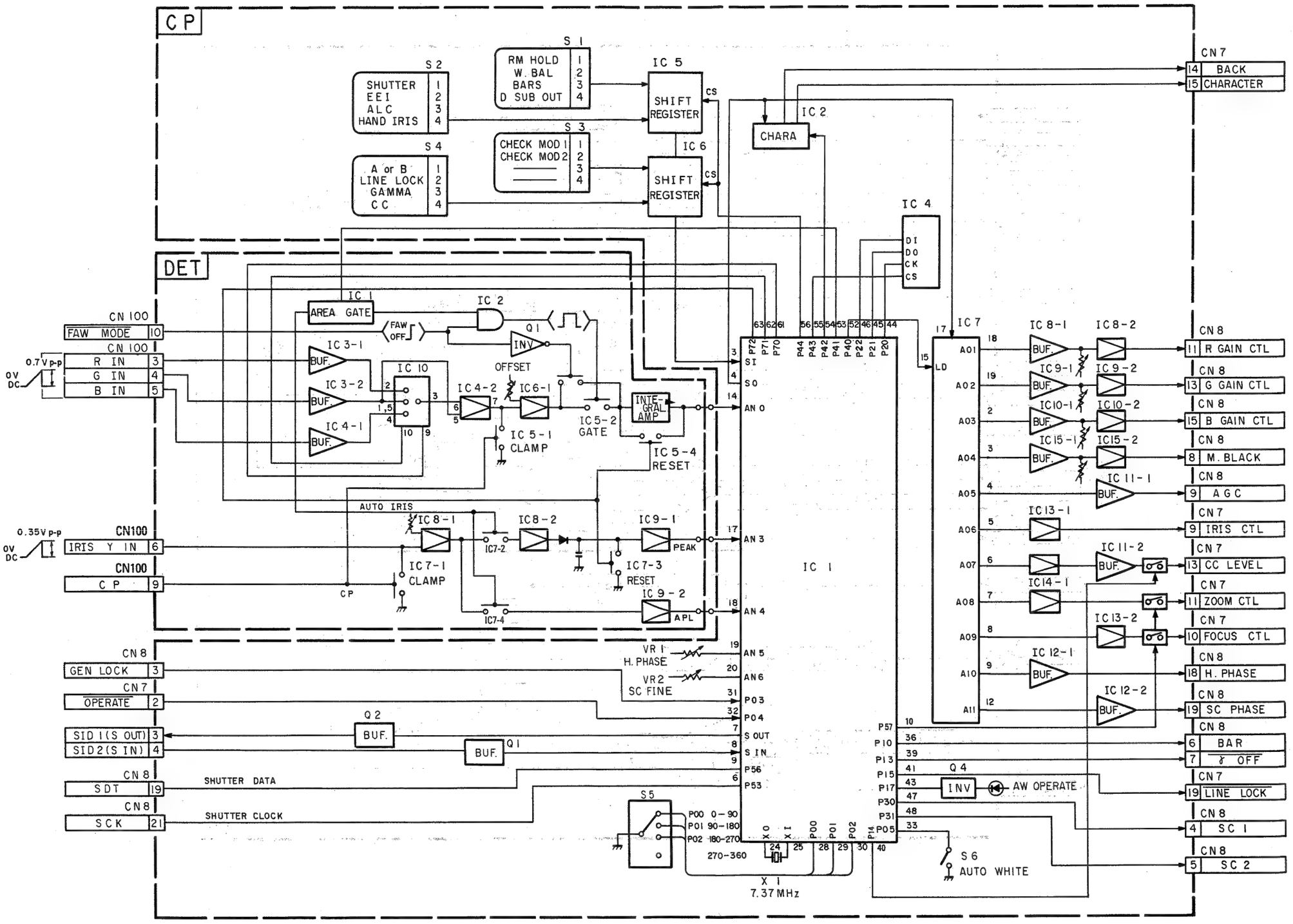
3.1 DR AND IS BOARD BLOCK DIAGRAMS



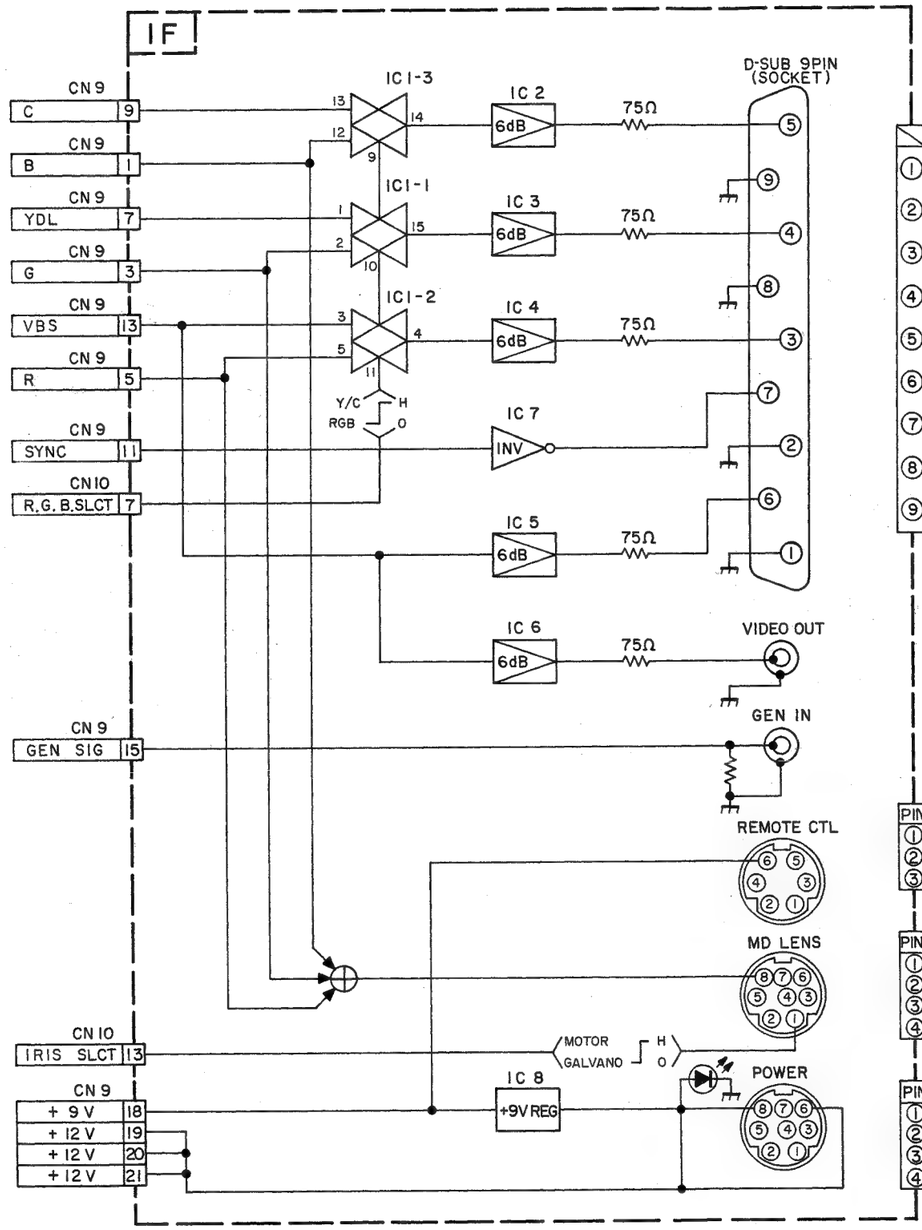
3.4 SG BOARD BLOCK DIAGRAM



3.5 CP AND DET BOARD BLOCK DIAGRAMS



3.6 IF BOARD BLOCK DIAGRAM



D-SUB 9PIN

	R. G. B.	Y/C	NOTE
①	GND	←	for B/C
②	GND	←	for G/Y
③	R	VBS	0.7Vp-p 75Ω (R) / 1Vp-p (VBS)
④	G	Y	0.7Vp-p 75Ω (G) / 1Vp-p (Y)
⑤	B	C	0.7Vp-p 75Ω (B) / 0.286Vp-p(N) 0.3 Vp-p(P)
⑥	VBS	←	1Vp-p 75Ω
⑦	SYNC	←	2Vp-p 75Ω
⑧	GND	←	for SYNC
⑨	GND	←	for R/VBS

REMOTE CTL

PIN	CN-NO.	SIGNAL	PIN	CN-NO.	SIGNAL
①		GND	4	10-22	SID1 (S OUT)
②	10-23	OPERATE	5	10-21	SID2 (S IN)
③		GND	6	9-18	+ 9 V

MD LENS

PIN	CN-NO.	SIGNAL	PIN	CN-NO.	SIGNAL
①	10-13	LENS SLCT	5	10-19	IRIS POSI
②		GND	6	10-14	ZOOM CTL
③	10-16	IRIS CTL	7	10-15	FOCUS CTL
④	9-21	+ 12V	8		AUTO IRIS Y

POWER

PIN	CN-NO.	SIGNAL	PIN	CN-NO.	SIGNAL
①		——	5		GND
②		GND	6	9-21	+ 12V
③		——	7		——
④		——	8	9-21	+ 12V

3-7

3.7 DR CIRCUIT BOARD

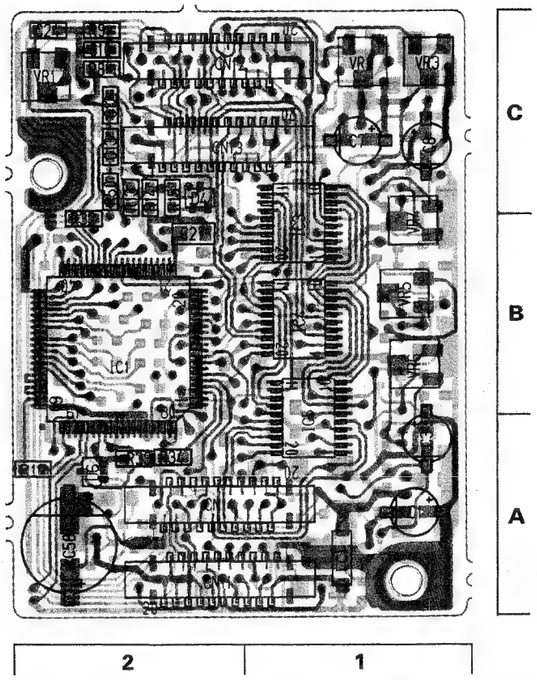
●ADDRESS TABLE OF BOARD PARTS

Each address may have an address error by one interval.

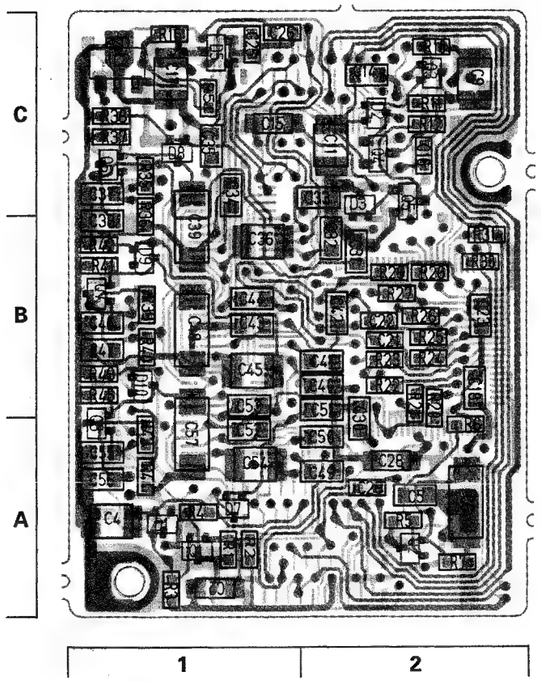
Side — A-1C — Y axis / X axis

IC1	A-2B	C1	A-1A
IC2	B-1C	C2	B-1A
IC3	A-1B	C3	A-1A
IC4	A-1B	C4	B-1A
IC5	A-1A	C5	B-2A
		C6	B-2A
Q1	B-1A	C7	A-1C
Q2	B-2A	C8	A-1C
Q3	B-2C	C9	B-2C
Q4	B-2C	C10	A-2C
Q5	B-2C	C11	B-2C
Q6	B-1C	C12	A-2C
Q7	B-1B	C13	A-2C
Q8	B-1A	C14	B-2C
		C15	B-1C
D1	B-1A	C16	B-2C
D2	B-2C	C17	B-1C
D3	B-2C	C18	B-2B
D4	A-2C	C21	B-2B
D5	B-1C	C22	B-2B
D6	A-2A	C23	B-2B
D7	B-1A	C24	A-2C
D8	B-1C	C25	B-1C
D9	B-1B	C26	B-1C
D10	B-1B	C27	A-2B
		C28	B-2A
R1	B-1A	C29	B-2A
R2	B-1A	C30	B-2A
R3	B-1A	C31	B-2B
R4	B-1A	C32	B-2B
R5	B-2A	C33	B-2C
R6	B-2A	C34	B-1C
R7	B-2A	C35	B-1C
R8	A-2C	C36	B-1B
R9	A-2C	C37	B-1C
R10	B-2C	C38	B-1B
R11	B-2C	C39	B-1B
R12	B-2C	C40	B-2B
R13	A-2C	C41	B-2B
R14	A-2C	C42	B-2B
R15	A-2C	C43	B-1B
R16	B-1C	C44	B-1B
R17	A-2A	C45	B-1B
R20	B-2B	C46	B-1B
R21	B-2B	C47	B-1B
R22	B-2B	C48	B-1B
R23	B-2B	C49	B-2A
R24	B-2B	C50	B-2A
R25	B-2B	C51	B-2B
R26	B-2B	C52	B-1A
R27	B-2B	C53	B-1B
R28	B-2B	C54	B-1A
R29	B-2B	C55	B-1A
R30	B-2B	C56	B-1A
R31	B-2B	C57	B-1A
R32	A-2B	C58	A-2A
R33	A-2A		
R34	A-2A	CN11	A-2A
R35	B-1C	CN12	A-2C
R36	B-1B	CN13	A-2C
R37	B-1C	CN14	A-2A
R38	B-1C		
R39	B-1B	LC1	A-1A
R40	B-1B		
R41	B-1B		
R42	B-1B		
R43	B-1A		
R44	B-1A		
R45	B-1B		
R49	B-1B		
R50	A-2C		
R51	B-1C		
VR1	A-2C		
VR2	A-1C		
VR3	A-1C		
VR4	A-1B		
VR5	A-1B		
VR6	A-1B		

— Side A —

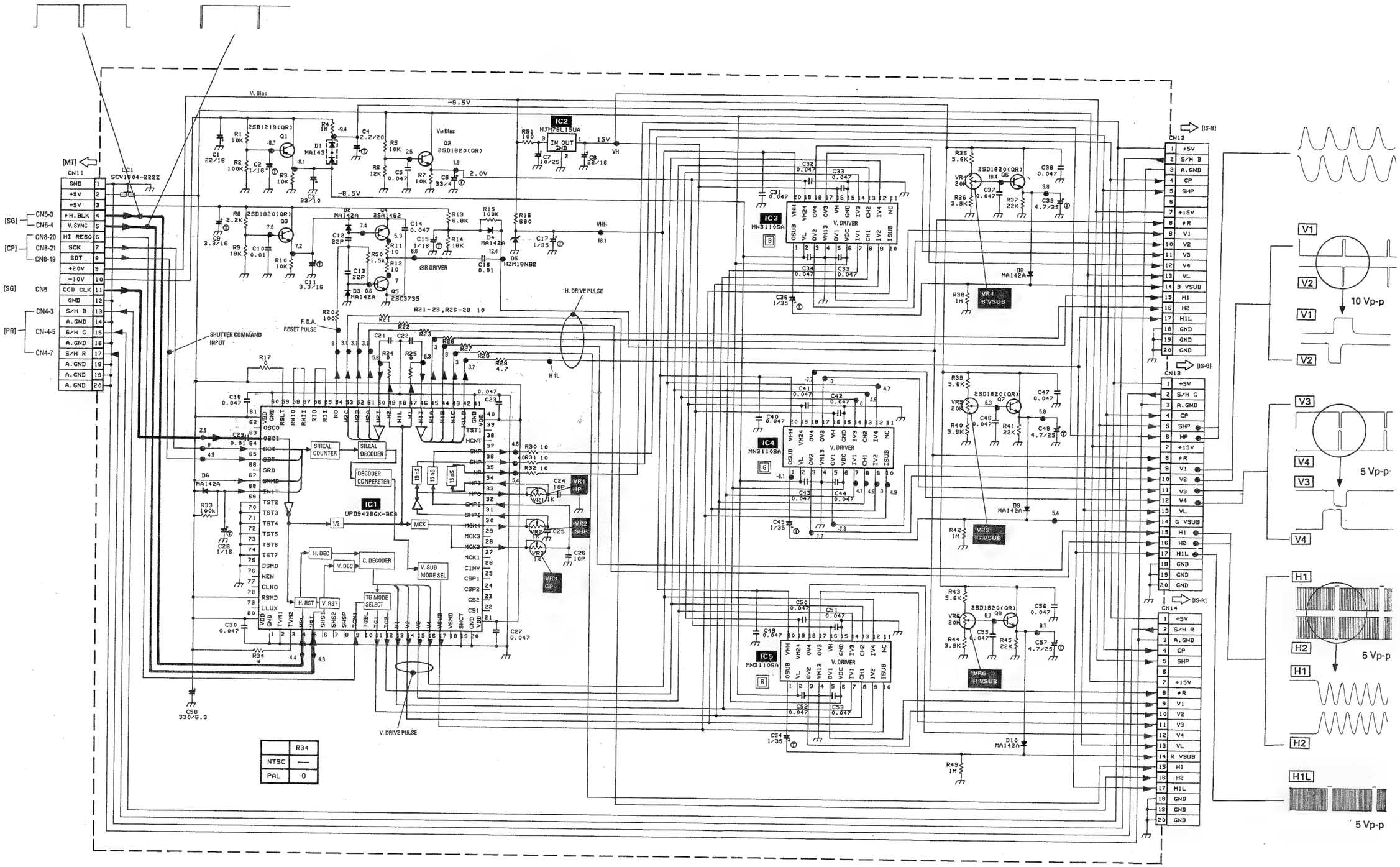


— Side B —



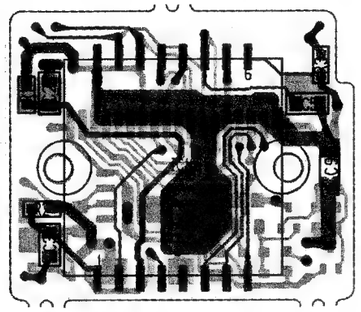
3-8

3.8 DR BOARD SCHEMATIC DIAGRAM 01

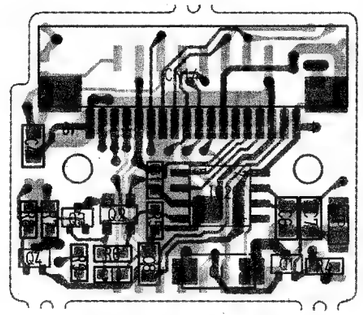


3.9 IS CIRCUIT BOARD

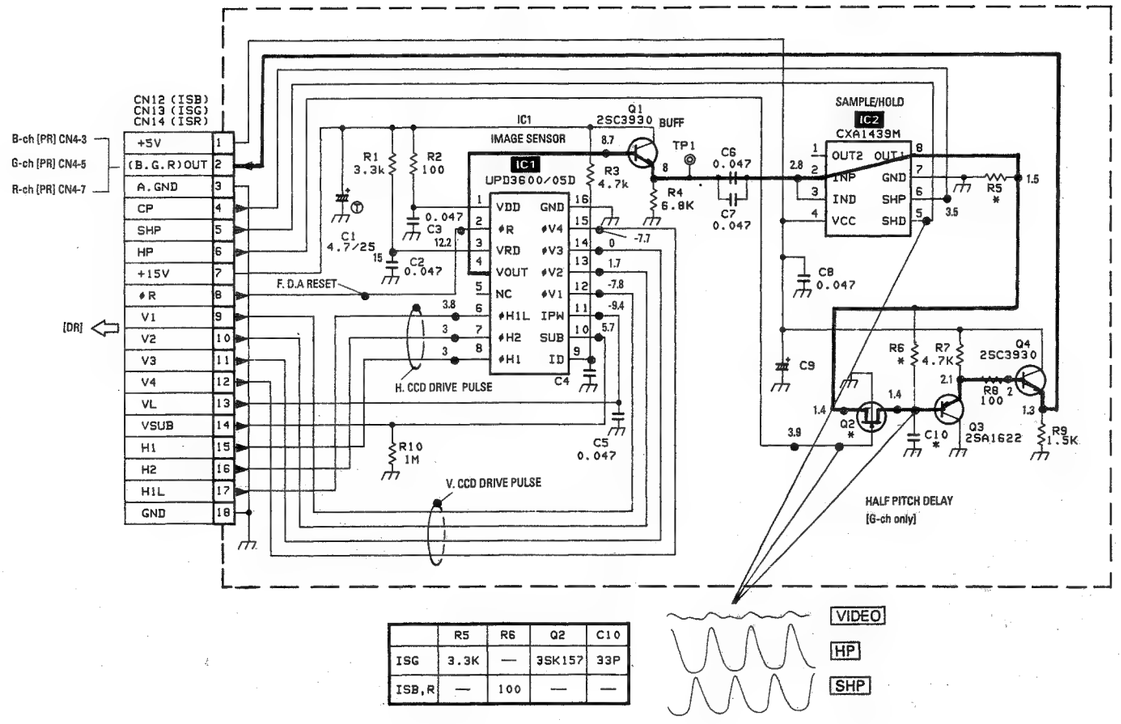
— Side A —



— Side B —



3-10

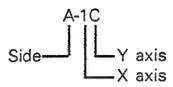


	R5	R6	Q2	C10
ISG	3.3K	—	3SK157	33P
ISB,R	—	100	—	—

3.11 PR CIRCUIT BOARD

●ADDRESS TABLE OF BOARD PARTS

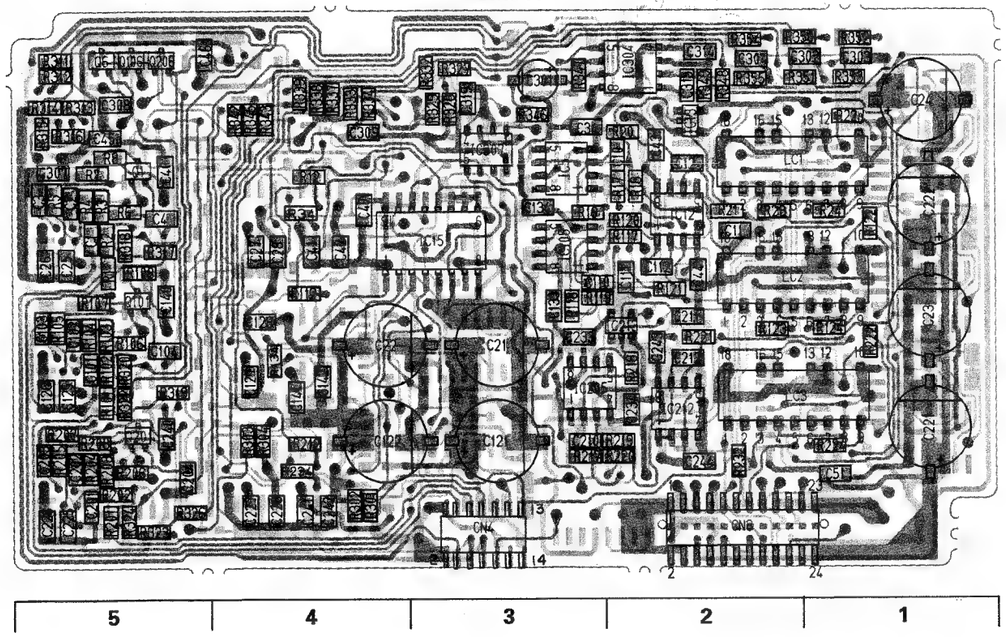
Each address may have an address error by one interval.



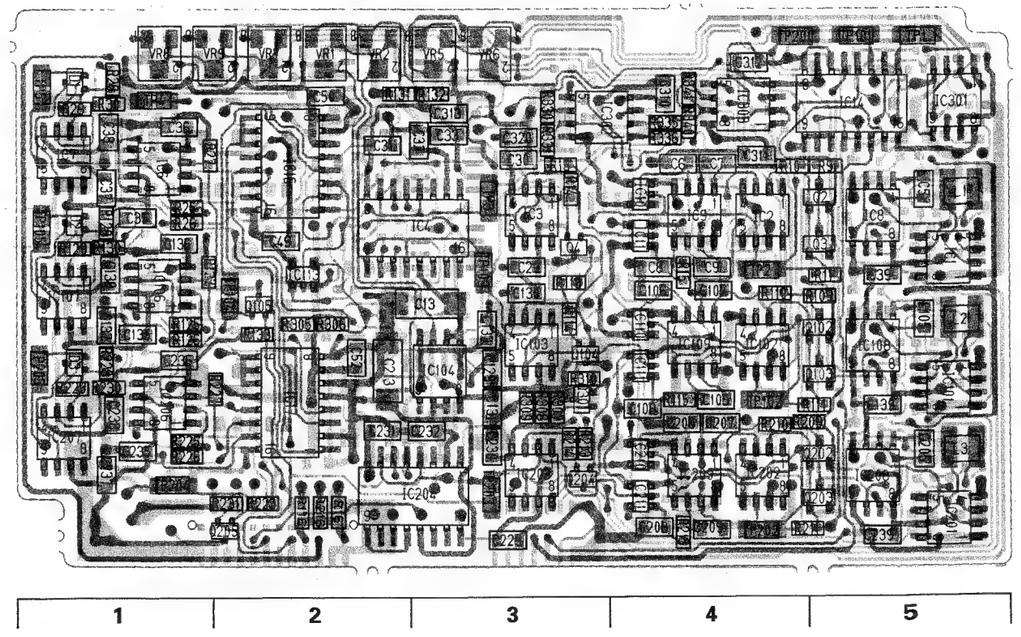
IC1	B-5B	IC111	B-4B	Q102	B-5B	R11	B-5B
IC2	B-4B	IC113	B-2B	Q103	B-5B	R12	A-4C
IC3	B-3B	IC201	B-5A	Q104	B-3B	R13	B-3C
IC4	B-3B	IC202	B-4A	Q105	B-2B	R14	B-3C
IC5	A-3C	IC203	B-3A	Q106	A-5C	R15	B-4B
IC6	B-1C	IC204	B-3A	Q201	A-5A	R16	B-2A
IC7	B-1C	IC205	A-3A	Q202	B-5A	R17	A-2C
IC8	B-5B	IC206	B-1A	Q203	B-5A	R18	A-2C
IC9	B-4B	IC207	B-1A	Q204	B-3A	R19	A-3B
IC10	B-4B	IC208	B-5A	Q205	B-2A	R20	A-2C
IC11	B-4B	IC209	B-4A	Q206	A-5C	R21	A-2B
IC12	A-2B	IC210	B-4A	Q301	B-3A	R22	A-1C
IC13	A-2C	IC211	B-4A			R23	A-2B
IC14	B-5C	IC212	A-2A	D1	B-1C	R24	A-1B
IC15	A-4B	IC213	A-2B	D2	B-1B	R25	B-1B
IC16	B-2B	IC301	B-5C	D3	B-1B	R26	B-1B
IC17	B-2A	IC302	B-4C			R27	B-2C
IC101	B-5A	IC303	B-4C	R1	A-5B	R28	B-1C
IC102	B-4B	IC304	A-2C	R2	A-5B	R29	B-1C
IC103	B-3B	IC307	A-3C	R3	A-5B	R30	B-1C
IC104	B-3B			R4	A-5B	R34	A-4B
IC105	A-3B	Q1	A-5C	R5	A-5B	R101	A-5A
IC106	B-1B	Q2	B-5B	R6	A-5B	R102	A-5B
IC107	B-1B	Q3	B-5B	R7	A-5C	R103	A-5B
IC108	B-5B	Q4	B-3B	R8	A-5C	R104	A-5B
IC109	B-4B	Q6	A-5C	R9	B-5C	R105	A-5B
IC110	B-4B	Q101	A-5B	R10	B-4C	R106	A-5B

R107	A-5B	R215	B-4A	R326	A-5A	C5	B-5C	C103	A-5B	C213	B-2B	TP1	B-5C
R108	A-5B	R216	B-2A	R327	A-3C	C6	B-4C	C104	A-5B	C221	A-1A	TP2	B-4B
R109	B-5B	R217	A-3A	R328	A-3C	C7	B-4C	C105	B-5B	C222	A-1B	TP3	B-3B
R110	B-4B	R218	A-2B	R329	A-3C	C8	B-4B	C106	B-4B	C225	A-5A	TP4	B-1C
R111	B-5A	R220	A-2A	R330	B-3C	C9	B-4B	C107	B-4B	C226	A-5A	TP5	B-1C
R112	A-4B	R219	A-2A	R331	B-3C	C10	A-2C	C108	B-4A	C227	A-4A	TP101	B-5C
R113	B-3B	R221	A-2B	R332	A-3C	C11	A-2B	C109	B-4A	C228	A-4A	TP102	B-4A
R114	B-3B	R222	A-1B	R333	A-4C	C12	A-2C	C110	A-3B	C229	B-3A	TP103	B-3B
R115	B-4A	R223	B-2A	R334	A-4C	C13	B-3B	C111	A-2B	C230	B-3A	TP104	B-2B
R116	B-2A	R224	A-1A	R335	B-4C	C21	A-3B	C112	A-2B	C231	B-2A	TP105	B-1B
R117	A-2B	R225	B-1A	R336	B-4C	C22	A-4B	C121	A-3A	C232	B-3A	TP201	B-4C
R118	A-3B	R226	B-1A	R337	A-4C	C23	A-1B	C122	A-4A	C233	A-3B	TP202	B-4A
R119	A-3B	R227	B-2A	R338	A-4C	C24	A-1C	C125	A-5A	C234	A-2A	TP203	B-3A
R120	A-2B	R228	B-1B	R339	A-4C	C25	A-5B	C126	A-5A	C235	B-1A	TP204	B-1A
R121	A-2B	R229	B-1A	R340	B-4C	C26	A-5B	C127	A-4A	C236	B-1B	TP205	B-1B
R122	A-1B	R230	B-1A	R341	B-4C	C27	A-4B	C128	A-4B	C237	B-1A		
R123	A-2B	R231	B-2A	R342	A-4C	C28	A-4B	C129	B-3B	C238	B-1A	CN3	A-2A
R124	A-1B	R232	A-2A	R343	A-4C	C29	B-3B	C130	B-3B	C239	B-5A	CN4	A-3A
R125	B-1B	R234	A-4A	R345	A-4C	C30	B-3C	C131	B-3A	C240	A-5A		
R126	B-1B	R301	A-4A	R346	A-3C	C31	B-2C	C132	B-3B	C241	A-4A	LC1	A-2C
R127	B-2B	R302	A-4A	R347	A-3C	C32	B-3C	C133	A-3B	C242	A-4A	LC2	A-2B
R128	B-1B	R303	A-4A	R348	A-2C	C33	B-3C	C134	A-3B	C243	A-2B	LC3	A-2A
R129	B-1B	R304	A-4A	R349	A-2C	C34	A-3C	C135	B-1B	C244	A-2A		
R130	B-1B	R305	B-2B	R350	A-2C	C35	B-1B	C136	B-1B	C301	A-3C		
R131	B-2C	R306	B-2B	R351	A-2C	C36	B-1C	C137	B-1B	C302	A-2C		
R132	B-3C	R307	B-3A	R352	A-1C	C37	B-1C	C138	B-1B	C303	A-1C		
R133	B-2B	R308	B-3A	R353	A-1C	C38	B-1C	C139	B-5A	C304	A-2C		
R134	A-4B	R309	B-3A	R354	A-2C	C39	B-5B	C140	A-5B	C307	A-5C		
R201	A-5A	R310	B-3B	R355	A-2C	C40	A-5C	C141	A-4A	C308	A-5C		
R202	A-5A	R311	A-5C			C41	A-4B	C142	A-4A	C309	A-4C		
R203	A-5A	R312	A-5C	VR1	B-2C	C42	A-4B	C201	A-5A	C310	B-4C		
R204	A-5A	R313	A-5C	VR2	B-2C	C43	A-2C	C202	A-5A	C311	B-4C		
R205	A-5A	R314	A-5C	VR5	B-3C	C44	A-2B	C203	A-5A	C312	B-4C		
R206	A-5A	R315	A-5C	VR6	B-3C	C45	A-5C	C204	A-5A	C313	B-3C		
R207	A-5A	R316	A-5C	VR7	B-2C	C46	A-5C	C205	B-5A	C314	A-2C		
R208	A-5A	R317	A-5B	VR8	B-1C	C47	A-4B	C206	B-4A	C315	A-2C		
R209	B-5A	R318	A-5B	VR9	B-2C	C49	B-2B	C207	B-4A	C319	A-3C		
R210	B-4A	R319	A-5A			C50	B-2C	C208	B-4A	C320	B-3C		
R211	B-5A	R320	A-5B	C1	A-5B	C51	A-1A	C209	B-4A				
R212	A-4A	R322	A-5A	C2	A-5B	C52	B-2B	C210	A-3A	L1	B-5C		
R213	B-3A	R323	A-5A	C3	A-5B	C101	A-5B	C211	A-2B	L2	B-5B		
R214	B-3A	R324	A-5A	C4	A-5B	C102	A-5B	C212	A-2B	L3	B-5A		

— Side A —



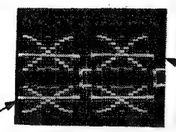
— Side B —



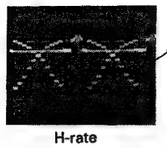
3-12

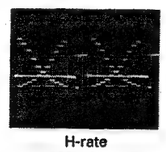
3.12 PR BOARD SCHEMATIC DIAGRAM 05

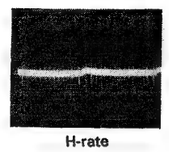

H-rate
300 mVp-p

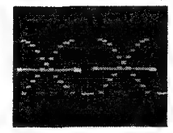

120 mV
80 mVp-p

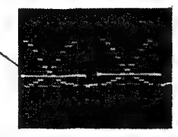

H-rate
280 mVp-p


H-rate
160 mVp-p


H-rate
300 mVp-p


H-rate


H-rate
0.7 Vp-p


H-rate
300 mVp-p

3.13 CE CIRCUIT BOARD

●ADDRESS TABLE OF BOARD PARTS

Each address may have an address error by one interval.

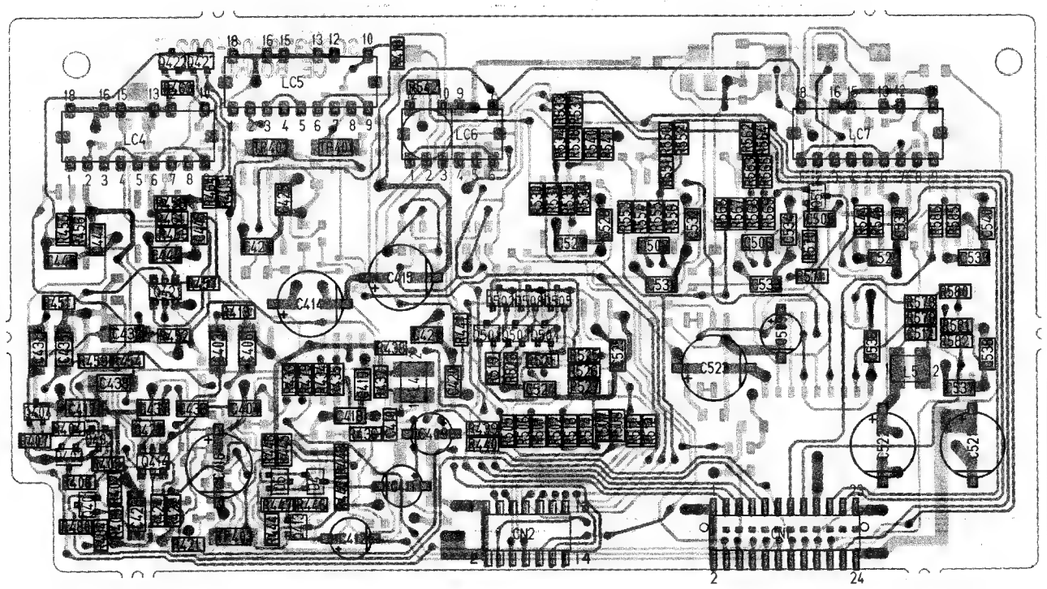
Side — A-1C (Y axis / X axis)

IC401	B-4B	Q413	A-4A	R402	A-5A	R433	A-4B
IC402	B-4B	Q414	A-5A	R403	A-5A	R434	A-4B
IC403	B-4B	Q421	A-5B	R404	A-5A	R435	A-4B
IC404	B-4B	Q422	A-5C	R405	A-5A	R436	A-4A
IC405	B-5B	Q423	B-4C	R406	A-5A	R437	A-4B
IC406	B-5B	Q424	B-4A	R407	A-5A	R438	A-4B
IC407	B-5B	Q425	B-4A	R408	B-4A	R439	A-3A
IC408	B-5B	Q426	B-4A	R409	B-5A	R440	A-3A
IC501	B-3B	Q427	A-5C	R410	B-5A	R441	A-3B
IC502	B-2A	Q428	B-5A	R411	B-5A	R442	A-4A
IC503	B-3B	Q429	B-5A	R412	B-5A	R443	A-4A
IC504	B-2B	Q430	B-5A	R413	A-4B	R444	A-4A
IC505	B-3B	Q431	B-5A	R414	B-5C	R445	A-4A
IC506	B-2B	Q432	B-4A	R415	B-4C	R446	A-4A
IC507	B-2B	Q501	A-3B	R416	A-4C	R447	A-4A
IC508	B-2B	Q502	A-3B	R417	B-4C	R448	A-4A
IC509	B-1B	Q503	B-3B	R418	B-4B	R451	A-5B
IC510	B-1B	Q504	A-3B	R419	B-4B	R452	A-5B
		Q505	A-3B	R420	B-4B	R453	A-5B
Q401	A-5A	Q506	B-4B	R421	A-5A	R454	A-5B
Q402	A-5A	Q507	A-3B	R422	A-5A	R455	A-5B
Q403	A-5A	Q508	A-3B	R423	B-5A	R456	A-5B
Q404	A-5A	Q509	B-3C	R424	A-5A	R457	A-5B
Q405	B-5A	Q510	B-2B	R425	B-5A	R458	A-5B
Q406	B-5A	Q511	A-2B	R426	B-4A	R459	A-5B
Q407	B-5A			R427	B-4A	R460	B-5C
Q408	B-5C	D4	A-4A	R428	B-4A	R461	A-5B
Q409	B-4C	D5	A-4A	R429	B-4A	R462	B-5C
Q410	B-4B			R430	B-4A	R463	A-5C
Q411	B-4A			R431	B-4A	R464	A-5C
Q412	B-4A			R432	B-4A	R465	A-4C

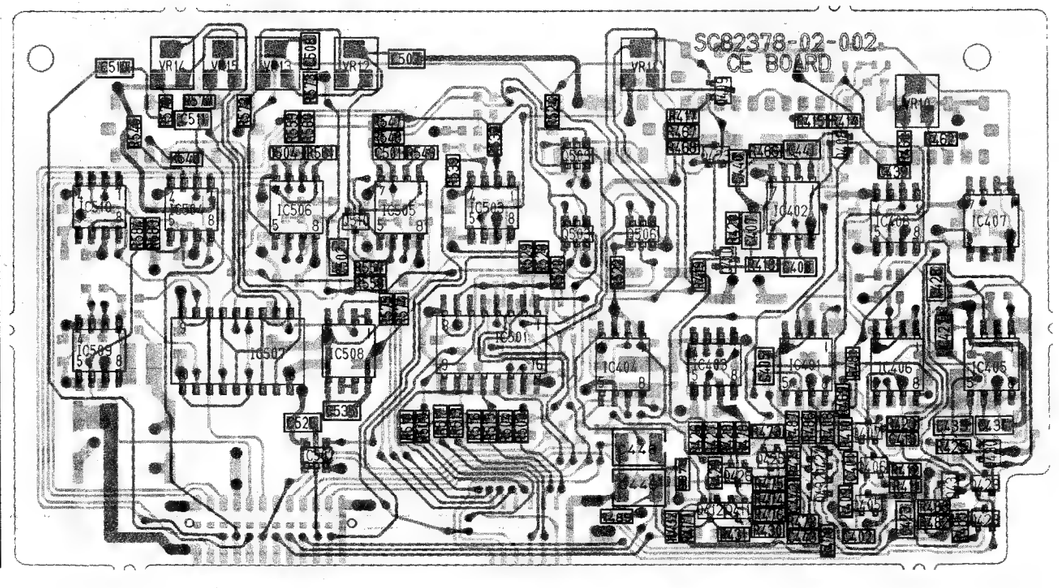
R466	B-4C	R523	A-3B	R569	A-2B	C421	A-4B
R467	B-4C	R524	B-3C	R570	A-2B	C422	A-5A
R468	B-4C	R525	A-3B	R571	A-2B	C423	B-5A
R469	B-5A	R526	A-3B	R572	B-2C	C424	A-4B
R470	B-4A	R527	A-3A	R573	B-2C	C425	A-4B
R471	B-4A	R528	B-3B	R574	B-2B	C426	A-5A
R472	B-4A	R529	B-3B	R575	B-2B	C427	B-5B
R473	B-4A	R530	A-3B	R576	B-1C	C428	B-5B
R474	B-4A	R531	A-3B	R577	B-1C	C431	A-5B
R475	B-4A	R532	B-3C	R578	A-1B	C432	A-5B
R476	B-4A	R533	A-3C	R579	A-1B	C433	B-5A
R477	B-4A	R534	A-3C	R580	A-1B	C434	B-5A
R478	B-4A	R535	A-3B	R581	A-1B	C435	A-5B
R479	A-4B	R536	A-3B	R582	A-1B	C436	A-5A
R480	A-5A	R537	A-3C	R583	B-1B	C437	A-5A
R481	B-5B	R538	A-3C	R584	B-1B	C438	A-5B
R482	B-5A	R539	B-3C	R585	A-1B	C439	B-5C
R483	B-5A	R540	A-3C	R586	A-1B	C440	B-4C
R484	A-5A	R541	A-3C			C441	B-4C
R485	B-5A	R542	A-4C	VR10	B-5C	C442	B-4A
R486	B-4A	R543	B-1C	VR11	B-4C	C443	B-4A
R487	B-4A	R544	A-1B	VR12	B-2C	C444	A-5B
R488	B-4A	R545	A-1B	VR13	B-2C	C445	A-5B
R489	B-3A	R546	B-1C	VR14	B-1C	C446	A-5B
R501	A-3A	R547	B-2C	VR15	B-2C	C447	A-5B
R502	A-3A	R548	B-2C			C448	B-4A
R503	B-3A	R549	B-3C	C401	B-5A	C449	B-4A
R504	B-3A	R550	A-2C	C402	B-5A	C501	B-2C
R505	A-3A	R551	A-2C	C403	A-5B	C502	B-2B
R506	A-3A	R552	A-2C	C404	A-4A	C503	A-2B
R507	A-3A	R553	A-3B	C405	B-4B	C504	B-2C
R508	A-3A	R554	A-2B	C406	A-4B	C505	A-2B
R509	B-3A	R555	A-2B	C407	B-4B	C506	A-2B
R510	B-2A	R556	A-2B	C408	B-4B	C507	B-2C
R511	A-3A	R557	B-2B	C409	A-3A	C508	B-2C
R512	A-2A	R558	B-2B	C410	A-4A	C509	A-2B
R513	B-3A	R559	B-2C	C411	A-4A	C510	B-1C
R514	A-3A	R560	B-2C	C412	A-4A	C511	B-1C
R515	B-3A	R561	B-2C	C413	B-5A	C512	A-1B
R516	B-3A	R562	A-2C	C414	A-4B	C521	A-1A
R517	B-3A	R563	A-2C	C415	A-4B	C522	A-1A
R518	A-3A	R564	A-2C	C416	A-5A	C523	A-2B
R519	A-3B	R565	A-2C	C417	A-5A	C524	A-3A
R520	B-3B	R566	A-2B	C418	A-4A	C525	A-3B
R521	A-3B	R567	A-2B	C419	A-4A	C526	B-2A
R522	B-3B	R568	A-2B	C420	A-3B	C527	A-3B

C528	A-3B	L4	A-4B
C529	A-1B	L5	A-1B
C530	A-1B		
C531	A-2B	TP401	A-4C
C532	A-2B	TP402	A-4C
C533	A-2B	TP403	A-4A
C534	A-2B		
C535	B-2A	CN1	A-2A
C536	A-1B	CN2	A-3A
C537	A-1A		
C538	A-1B	LC4	A-5C
C539	A-1B	LC5	A-4C
C540	A-1B	LC6	A-3C
		LC7	A-1C

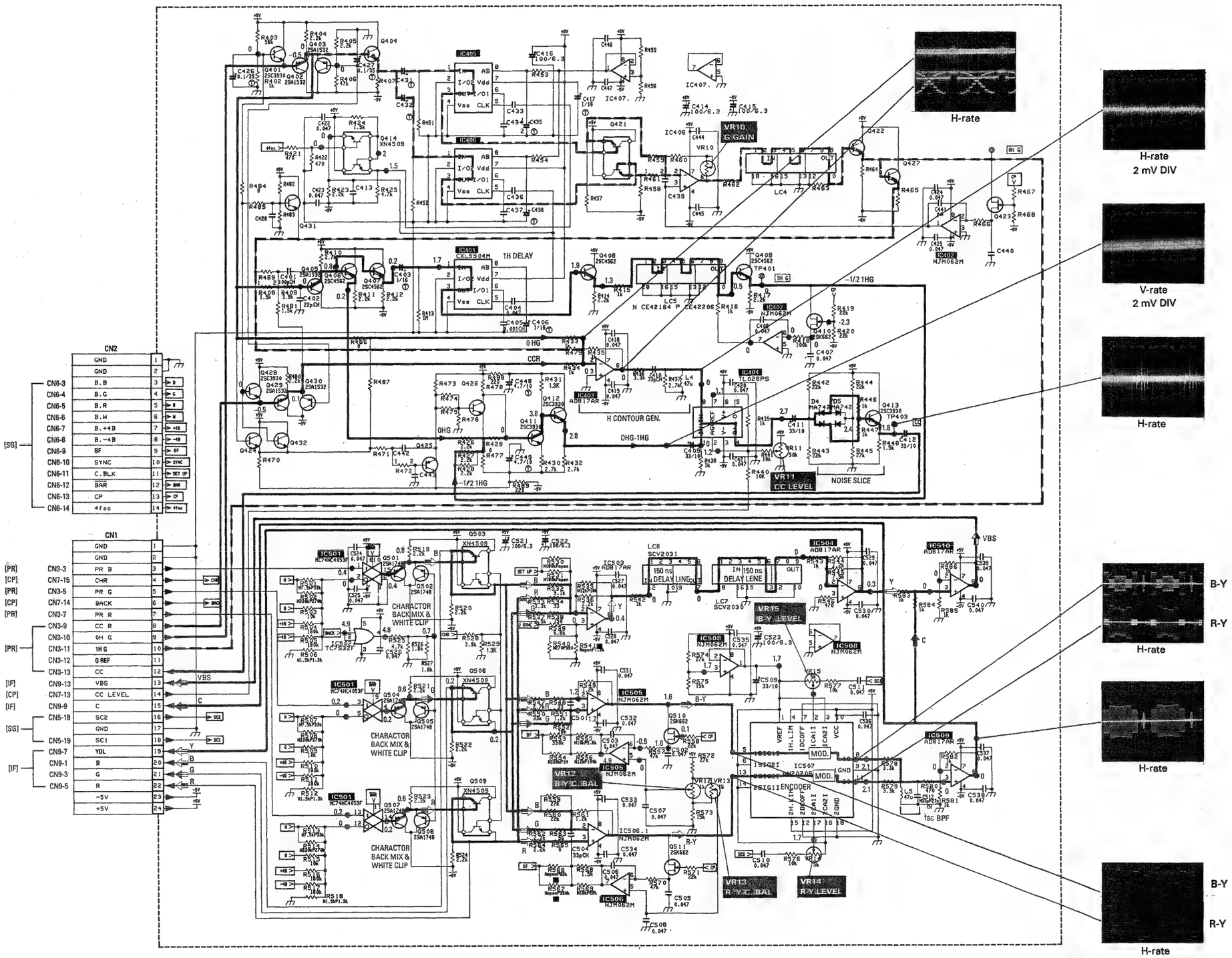
— Side A —



— Side B —



3.14 CE BOARD SCHEMATIC DIAGRAM 06



3-15

3.15 SG CIRCUIT BOARD

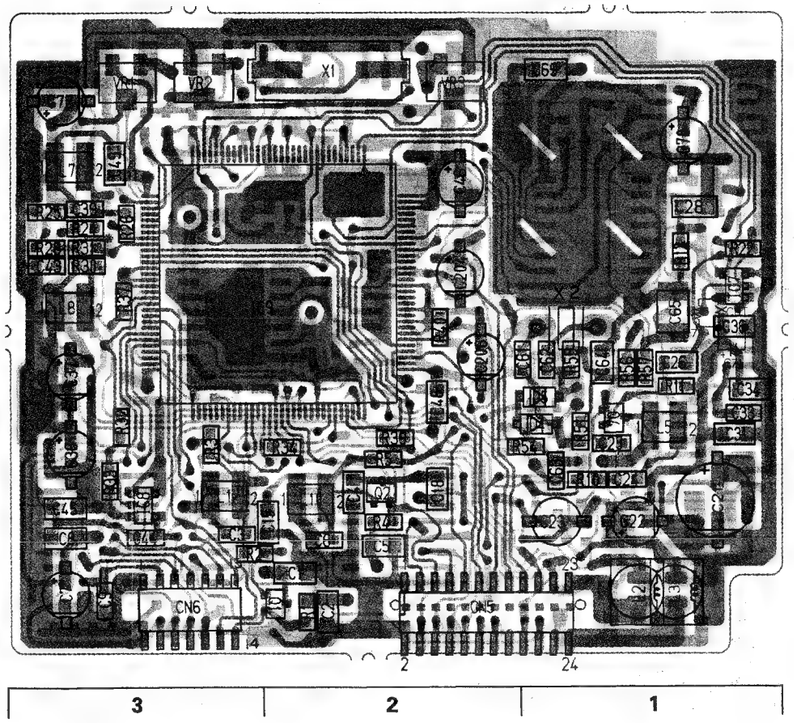
●ADDRESS TABLE OF BOARD PARTS

Each address may have an address error by one interval.

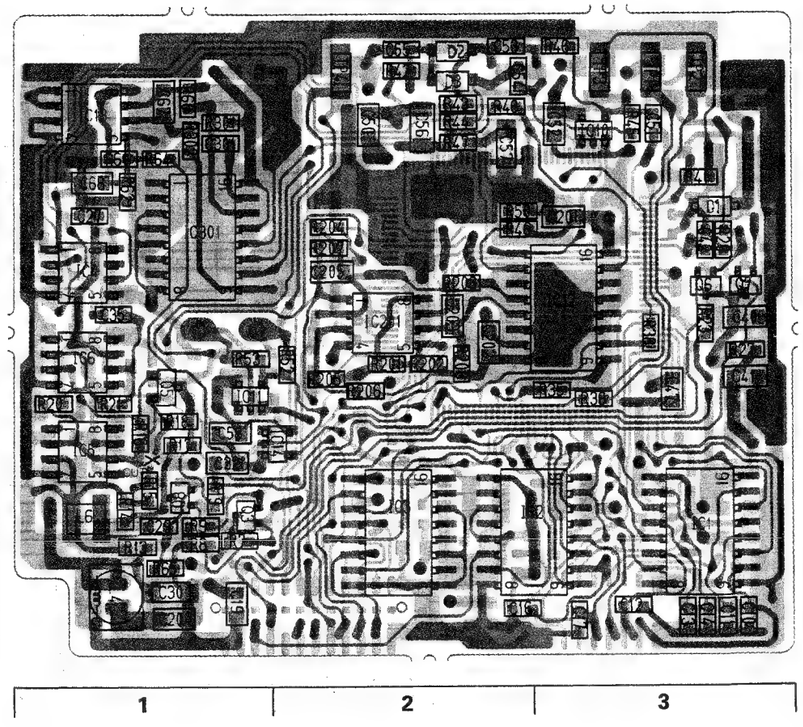
A-1C
Side — Y axis
X axis

IC1	B-3A	R51	A-1B	C55	B-2C
IC2	B-3A	R52	B-2B	C56	B-2C
IC3	B-2A	R53	B-1B	C57	B-2C
IC4	B-1B	R54	A-2A	C58	B-1B
IC5	B-1B	R55	A-1B	C61	A-2B
IC6	B-1B	R56	A-1B	C62	A-1B
IC7	A-1B	R57	A-1B	C63	A-1A
IC8	A-3A	R60	B-1C	C64	A-1B
IC9	A-2B	R61	B-1C	C65	A-1B
IC10	B-3C	R62	B-1C	C67	B-1C
IC11	B-1B	R64	B-1C	C68	B-1C
IC12	B-3B	R65	B-1A	C69	A-1C
IC13	B-1C	R201	B-2B	C70	A-1C
IC14	B-2A	R202	B-2B	C72	A-3C
IC201	B-2B	R203	B-2B	C201	B-3C
IC301	B-1C	R204	B-2B	C202	B-2B
		R205	B-2B	C203	B-2B
Q1	A-2A	R206	B-2B	C204	A-2B
Q2	A-2A	R207	B-2B	C205	B-2B
Q3	B-1A	R208	B-2B	C206	A-2B
Q4	A-1B	R301	B-1C	C301	B-1C
Q5	B-1B	R302	B-1C		
Q6	B-3B			L1	A-3A
Q7	B-3B	VR1	A-3C	L2	A-1A
Q8	B-1A	VR2	A-3C	L3	A-1A
		VR3	A-2C	L4	B-1A
D1	B-3C			L5	A-1B
D2	B-2C	C1	A-2A	L6	B-1A
D3	B-2C	C2	A-2A	L7	A-3C
D4	A-1B	C3	A-3A	L8	A-3B
D5	A-1B	C4	A-2A	L10	A-2A
		C5	A-2A		
R1	A-2A	C6	A-2A	TP1	B-3C
R2	A-3A	C7	A-3A	TP2	B-3C
R3	A-3A	C8	A-3A	TP3	B-3C
R4	A-2A	C9	A-3A	TP4	B-2C
R5	A-2A	C10	B-3A		
R7	B-1A	C11	B-3A	CN5	A-2A
R8	B-1A	C12	B-3A	CN6	A-3A
R9	B-1A	C13	B-3A		
R10	A-1A	C14	B-3A	X1	A-2C
R11	A-1B	C15	A-3A	X2	A-1B
R12	A-1B	C16	B-2A		
R13	B-1A	C17	B-3A		
R14	B-1A	C18	A-2A		
R15	B-1A	C19	B-1A		
R16	B-1B	C20	B-1A		
R17	B-1A	C21	A-1A		
R18	B-1B	C22	A-1A		
R19	B-1A	C23	A-1A		
R20	B-1B	C24	A-1A		
R21	B-1B	C25	A-1A		
R22	A-1B	C26	A-1B		
R23	B-3B	C27	B-1C		
R24	A-3B	C28	A-1C		
R25	A-3C	C29	B-1A		
R26	A-3C	C30	B-1A		
R27	B-3B	C31	A-1B		
R28	A-3B	C32	B-1A		
R29	B-3B	C33	A-1B		
R30	A-3B	C34	A-1B		
R31	A-3B	C35	B-1B		
R32	A-3B	C36	A-1B		
R33	A-3A	C37	A-3B		
R34	A-2A	C38	A-3A		
R35	B-3B	C39	A-3C		
R36	B-3B	C40	B-3B		
R37	A-3B	C41	B-3B		
R38	B-3B	C42	B-3B		
R39	A-2B	C43	A-3B		
R40	A-2B	C44	A-3A		
R41	B-3C	C45	A-3A		
R42	B-2C	C46	A-2C		
R43	B-2C	C47	B-3B		
R44	B-2C	C48	A-2B		
R45	B-3C	C49	A-3C		
R46	B-3C	C50	B-2C		
R47	B-2C	C51	B-3C		
R48	B-2C	C52	B-3C		
R49	B-2B	C53	B-2C		
R50	B-2C	C54	B-2C		

— Side A —

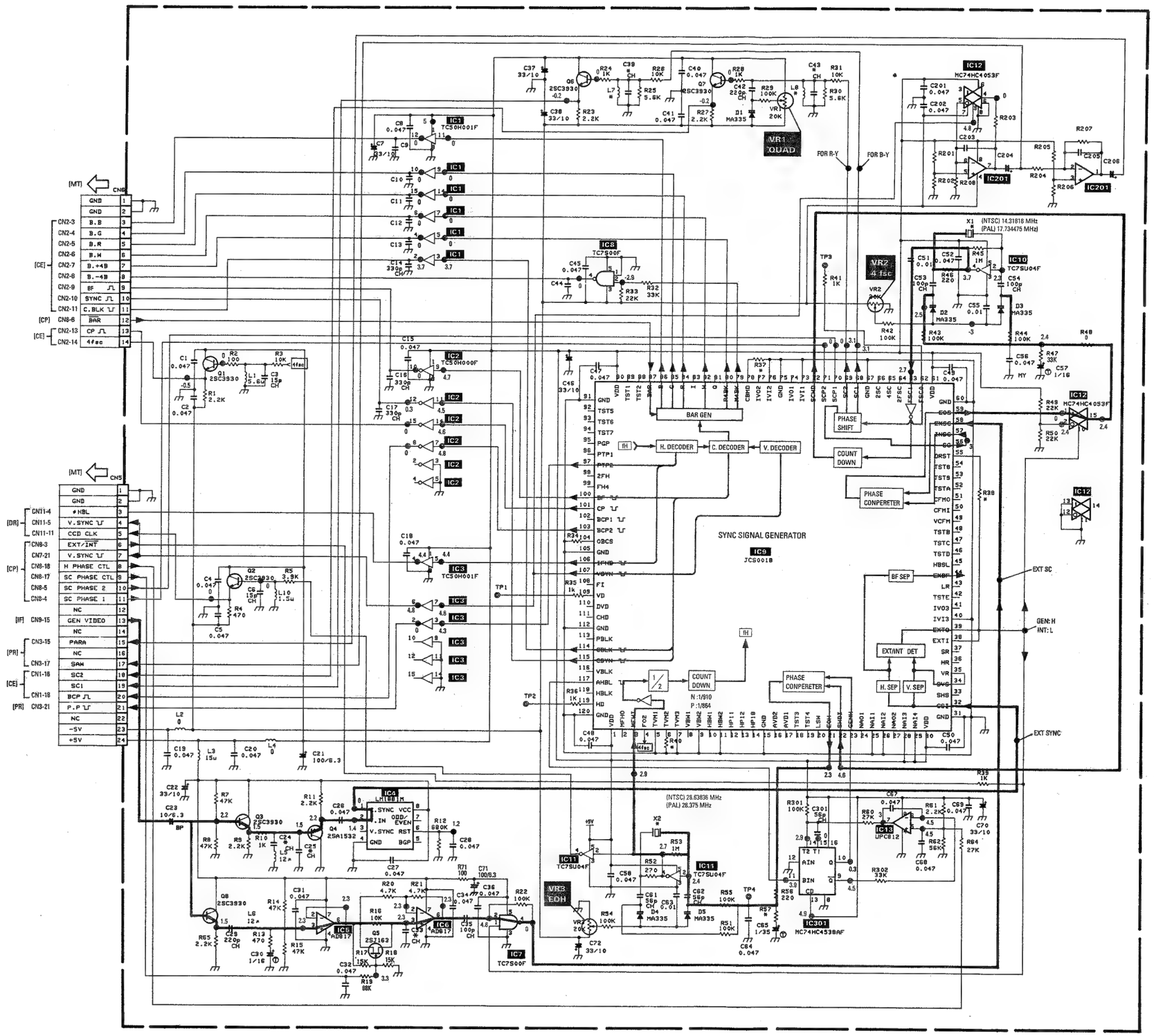


— Side B —



3-16

3.16 SG BOARD SCHEMATIC DIAGRAM 07



	R37	R38	R40	X1	X2
NTSC	—	0	0	SCV2219-001W	CE41081-A0A
PAL	0	—	—	CE42275-001Y	CE41212-001

	L7	C39	L8	C43	R57	C33	C24	C25
NTSC	47u	39P	47u	15P	10k	18P	150P	22P
PAL	33u	27P	33u	—	1k	9P	82P	OPEN

3.17 CP/CPA CIRCUIT BOARD

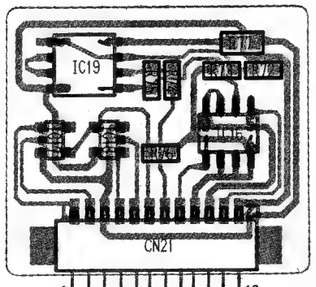
●ADDRESS TABLE OF BOARD PARTS

Each address may have an address error by one interval.

A-1C
Side — Y axis
X axis

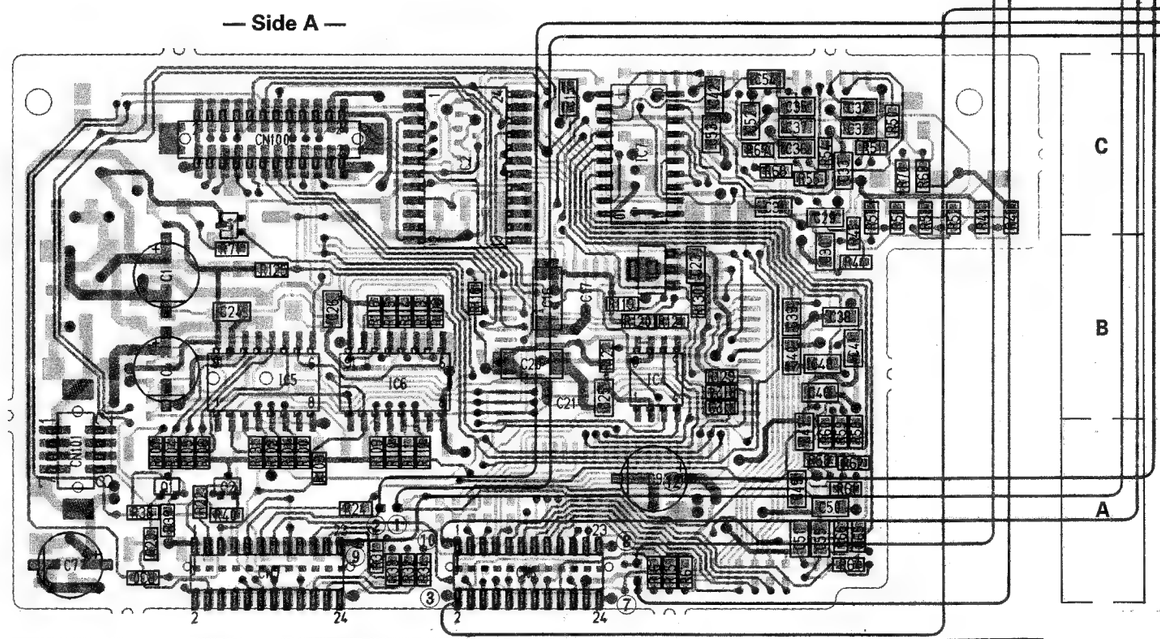
IC1	B-3B	R1	B-3A	R25	B-4A	R51	A-1C	R103	A-4A	R127	B-5B	C14	B-3C	C39	A-2B	TP1	B-4B
IC2	A-3C	R2	B-3A	R26	A-4A	R52	A-1C	R104	A-5A	R128	B-5B	C15	A-3C	C40	A-2B	TP2	B-4C
IC3	A-2B	R3	B-3A	R27	B-4A	R53	A-1C	R105	A-5A	R129	A-2B	C16	A-3B	C41	A-1B	TP3	B-4B
IC4	A-2B	R4	B-3A	R28	A-2A	R54	A-2C	R106	A-5A	R130	A-2B	C17	A-3B	C42	A-2C	TP4	B-5C
IC5	A-5B	R5	B-3A	R29	B-4A	R55	A-2C	R107	A-5A	R131	A-4A	C18	B-5B	C43	B-3C	TP5	B-5C
IC6	A-4B	R6	A-2A	R30	A-5A	R56	A-1C	R108	A-3B			C19	B-4B	C44	B-3C	TP6	B-3C
IC7	A-2C	R7	B-2A	R31	A-4A	R57	A-1C	R109	A-4A	VR1	B-5B	C20	A-3B	C45	B-3C		
IC8	B-2C	R8	B-3A	R32	A-4A	R58	A-1A	R110	A-4A	VR2	B-4B	C21	A-3B	C46	A-2B	LD1	B-5C
IC9	B-1C	R9	B-2A	R33	A-4A	R59	A-2A	R111	A-4A	VR3	B-1C	C23	A-2B	C47	A-2A		
IC10	B-2C	R10	B-3A	R34	A-4A	R60	A-2A	R112	A-4A	VR4	B-1C	C24	A-4B	C48	A-2B	S1	B-4A
IC11	B-1B	R11	B-2A	R35	B-4A	R61	A-1A	R113	A-4B	VR5	B-1C	C25	A-3B	C49	A-2A	S2	B-5A
IC12	B-2C	R12	B-3A	R36	B-4A	R62	A-1A	R114	A-4B	VR6	B-1C	C26	A-4B	C50	A-2A	S3	B-4B
IC13	B-1A	R13	B-2A	R37	B-4A	R63	A-2A	R115	A-4B			C27	B-3C	C51	A-2A	S4	B-4B
IC14	B-1A	R14	B-3A	R38	A-5A	R64	A-1A	R116	A-4B	C1	A-5B	C28	B-3C	C52	A-2C	S5	B-4B
IC15	B-2C	R15	A-2A	R39	A-5A	R65	A-1A	R117	B-3B	C2	B-5B	C29	A-2C	C53	A-2C	S6	B-4C
		R16	A-2A	R40	A-4A	R66	A-2A	R118	A-3B	C3	B-5C	C30	A-2B	C54	A-2C		
Q1	A-5A	R17	B-3A	R41	B-3C	R67	A-2C	R119	A-3B	C4	A-5B	C31	A-2C	C55	A-2A	CN7	A-4A
Q2	A-4A	R18	B-3A	R42	B-3C	R68	A-2C	R120	A-2B	C5	B-5B	C32	A-1C			CN8	A-3A
Q4	A-4C	R19	B-3A	R43	B-3C	R69	A-1C	R121	A-2B	C6	B-5B	C33	A-2C	L1	B-5B		
		R20	B-3A	R44	A-1B	R70	A-1C	R122	A-3B	C7	A-5A	C34	A-1C	L2	B-5A	CN100	A-4C
D1	B-3C	R21	B-3A	R45	A-1C	R71	A-4B	R123	A-2B	C8	B-5A	C35	A-2C	L3	B-5A	CN101	A-5A
D2	B-3C	R22	A-5A	R46	A-1C	R100	A-4A	R124	A-2B	C9	A-2A	C36	A-2C	L4	B-2A		
D3	B-3C	R23	A-5A	R47	A-1C	R101	A-4A	R125	A-4B	C10	B-2A	C37	A-2C	L5	B-3C	X1	B-2C
		R24	A-4A	R50	A-1C	R102	A-4A	R126	B-5B	C13	B-4C	C38	A-2B				

— CPA BOARD —

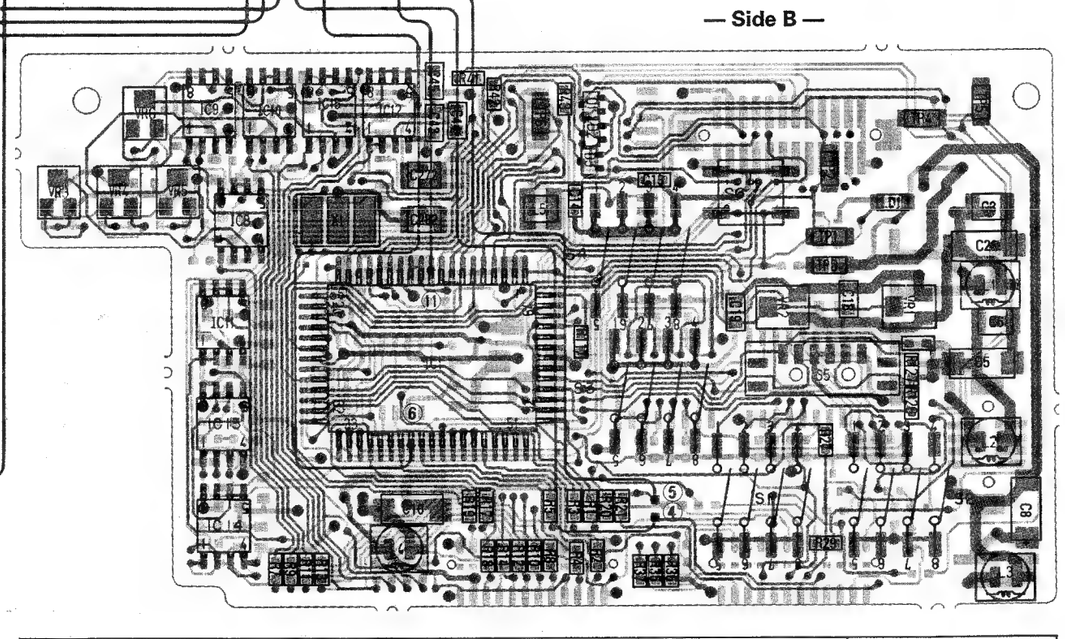


The circuit of the CPA board is incorporated in the CP board in and after the Serial No. 92 (U-version) or the Serial No. 114 (E-version).

— Side A —



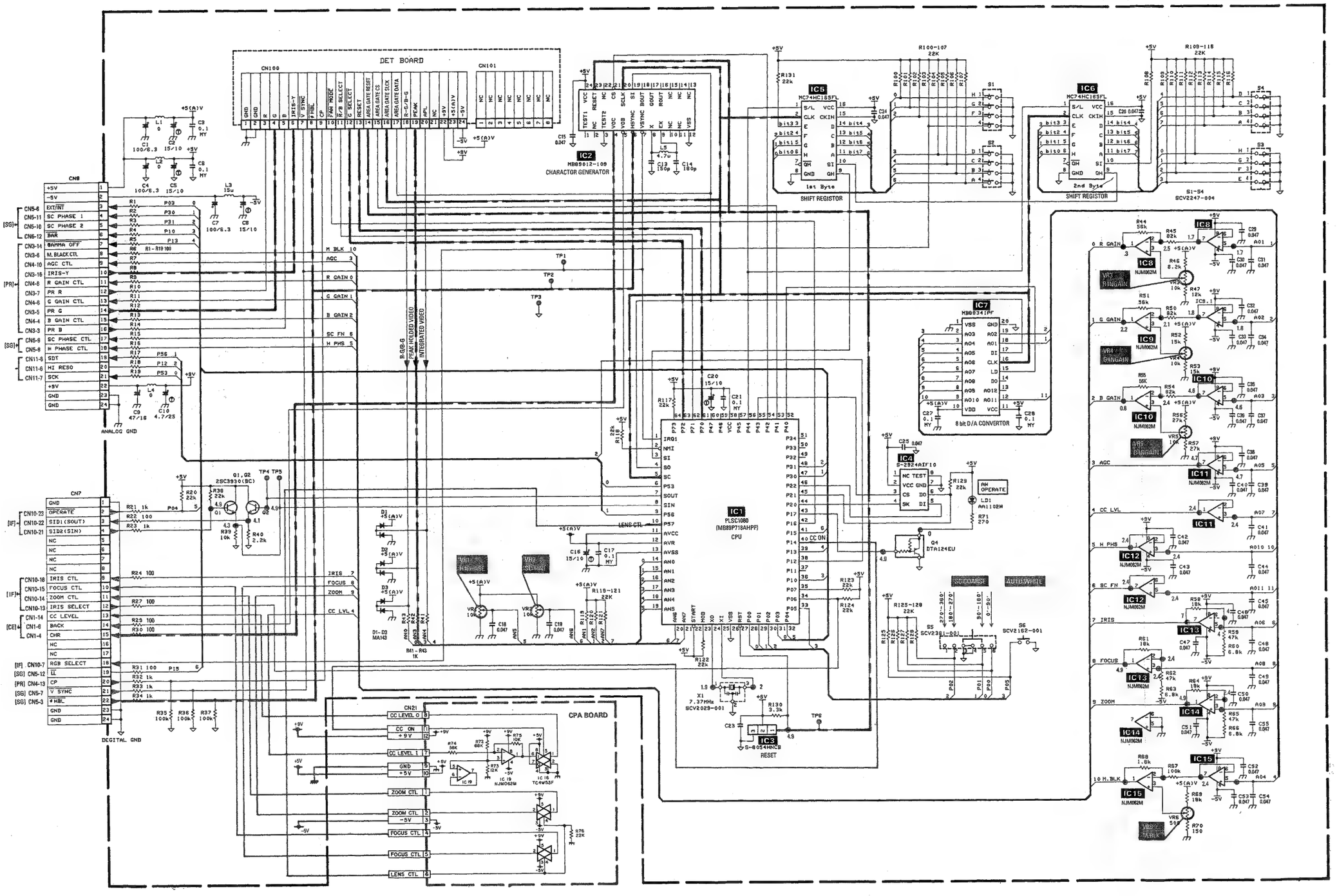
— Side B —



3.18 CP/CPA BOARD SCHEMATIC DIAGRAM 08/12

SWITCH		MODE	OFF (OPEN)	ON (SHORT)
S1	1	DATA	CAMERA	REMOTE
	2	WHITE BAL	AUTO	FAW
	3	MODE	CAMERA	BARS
	4	D-SUB OUT	Y/C	R G B
S2	1	SHUTTER	NORMAL	1/100 (N), 1/120 (P)
	2	EEI	OFF	ON
	3	ALC	OFF	ON
	4	LENS	AUTO	MANUAL

SWITCH		MODE	OFF (OPEN)	ON (SHORT)
S3	1	CHECK MODE 1	OFF	ON
	2	MHECK MODE2	OFF	ON
	3	NC		
	4	NC		
S4	1	SELECT	B MODE	A MODE
	2	NC		
	3	GAMMA	OFF	ON
	4	CC	OFF	ON



3-19

3.19 DET CIRCUIT BOARD

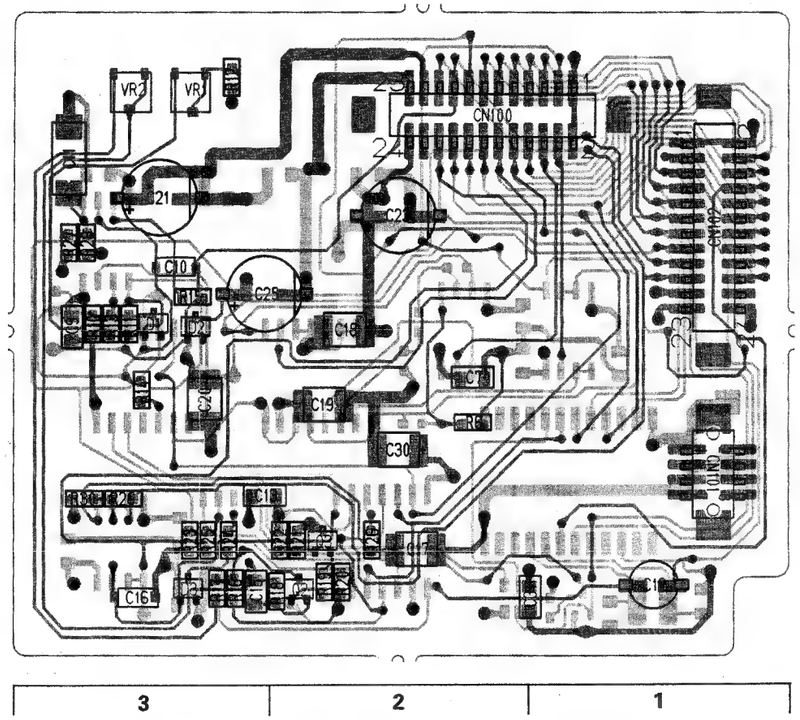
●ADDRESS TABLE OF BOARD PARTS

Each address may have an address error by one interval.

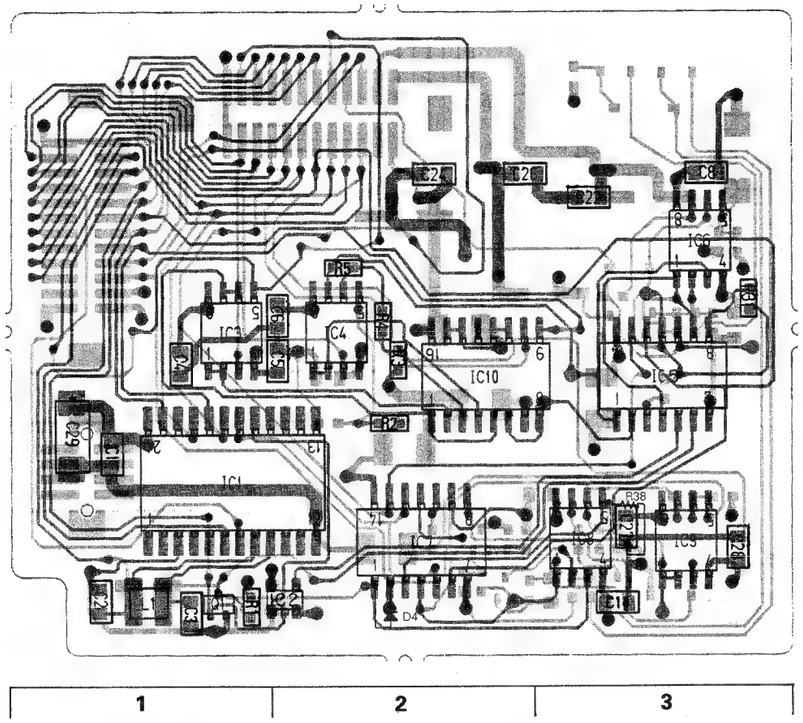
Side — A-1C — Y axis / X axis

IC1	B-1A	L1	B-1A
IC2	B-2A		
IC3	B-1B	TP1	B-3B
IC4	B-2B	TP2	B-3B
IC5	B-3B	TP3	B-3B
IC6	B-3B	TP4	B-2A
IC7	B-2A	TP5	B-3A
IC8	B-3A	TP6	B-2B
IC9	B-3A		
IC10	B-2B	CN100	A-2C
		CN101	A-1A
Q1	B-1A	CN102	A-1B
Q2	A-2A		
Q3	A-2A		
D1	A-3B		
D2	A-3B		
D3	A-3A		
R1	B-1A		
R2	B-2B		
R3	B-2B		
R4	B-2B		
R5	B-2B		
R6	A-2B		
R10	A-3B		
R11	A-3B		
R12	A-3C		
R13	A-3B		
R14	A-3B		
R15	A-3B		
R16	A-3A		
R17	A-3A		
R18	A-3A		
R19	A-2A		
R20	A-2A		
R21	A-2A		
R22	A-2A		
R23	A-3A		
R24	A-3A		
R25	A-3A		
R26	A-2A		
R27	A-3B		
R28	A-3B		
R29	A-3A		
R30	A-3A		
R31	B-3B		
VR1	A-3C		
VR2	A-3C		
C1	B-1A		
C2	B-1A		
C3	B-1A		
C4	B-1B		
C5	B-2B		
C6	B-2B		
C7	A-2B		
C8	B-3C		
C9	A-3B		
C10	A-3B		
C11	A-3C		
C12	A-1A		
C13	A-3A		
C14	B-3A		
C15	A-3A		
C16	A-3A		
C17	A-2A		
C18	A-2B		
C19	A-2B		
C20	A-3B		
C21	A-3C		
C22	B-3C		
C23	A-2C		
C24	B-2C		
C25	A-3B		
C26	B-2C		
C27	B-3A		
C28	B-3A		
C29	B-1B		
C30	A-2A		
C31	A-2A		

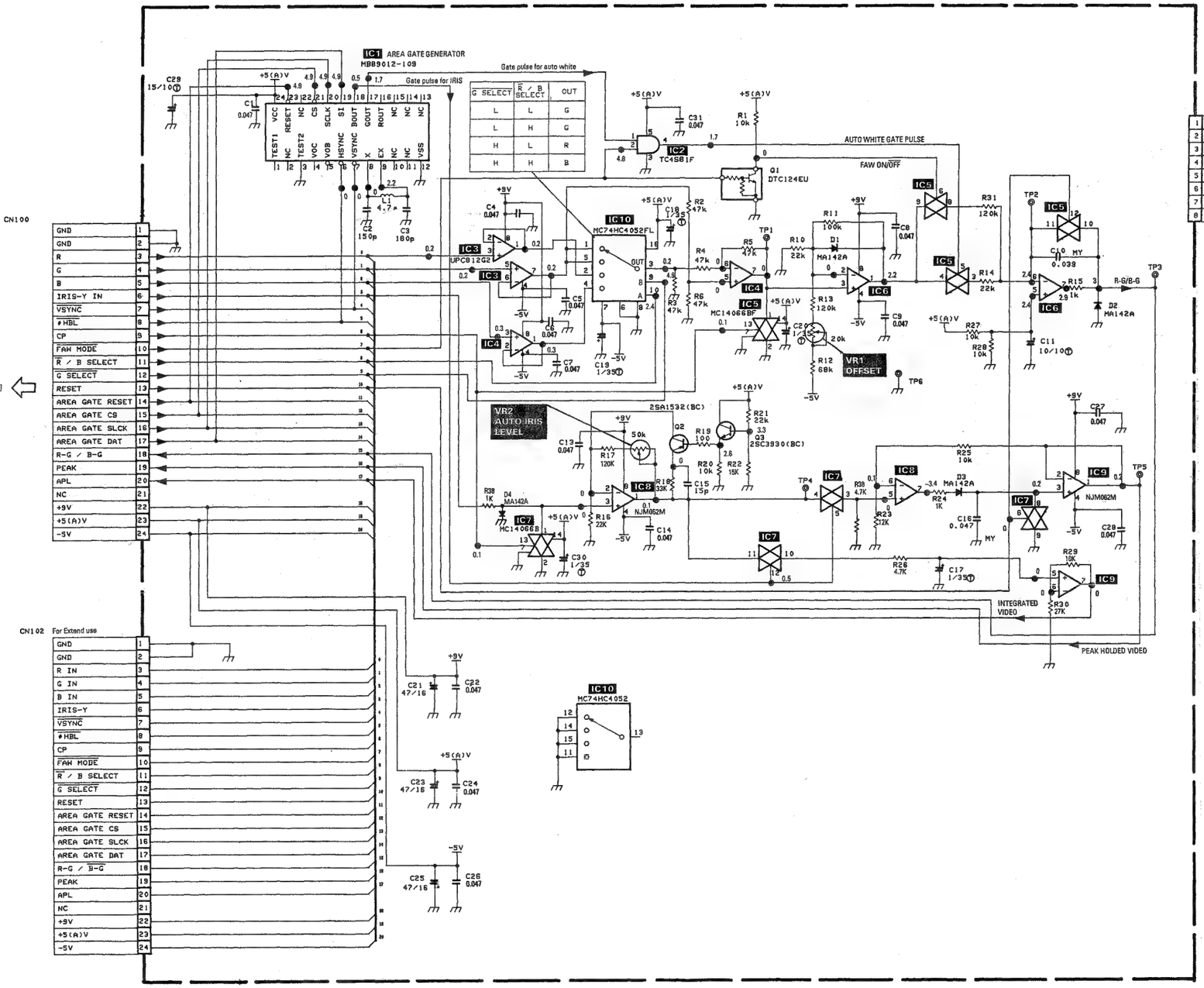
— Side A —



— Side B —

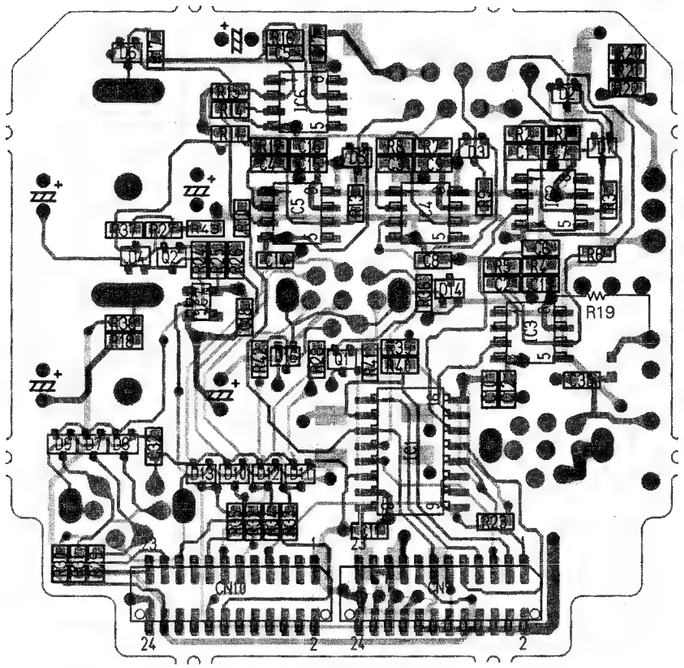


3.20 DET BOARD SCHEMATIC DIAGRAM 09

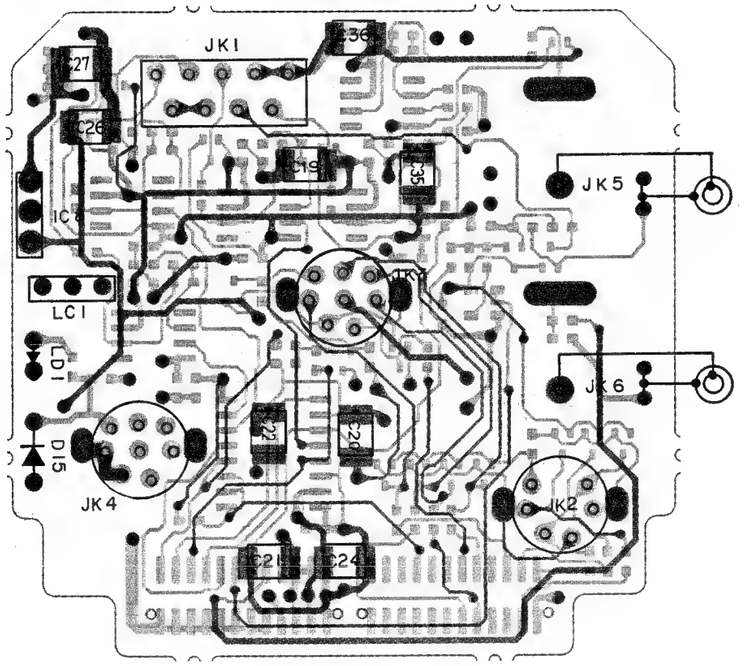


3.21 IF CIRCUIT BOARD

— Side A —

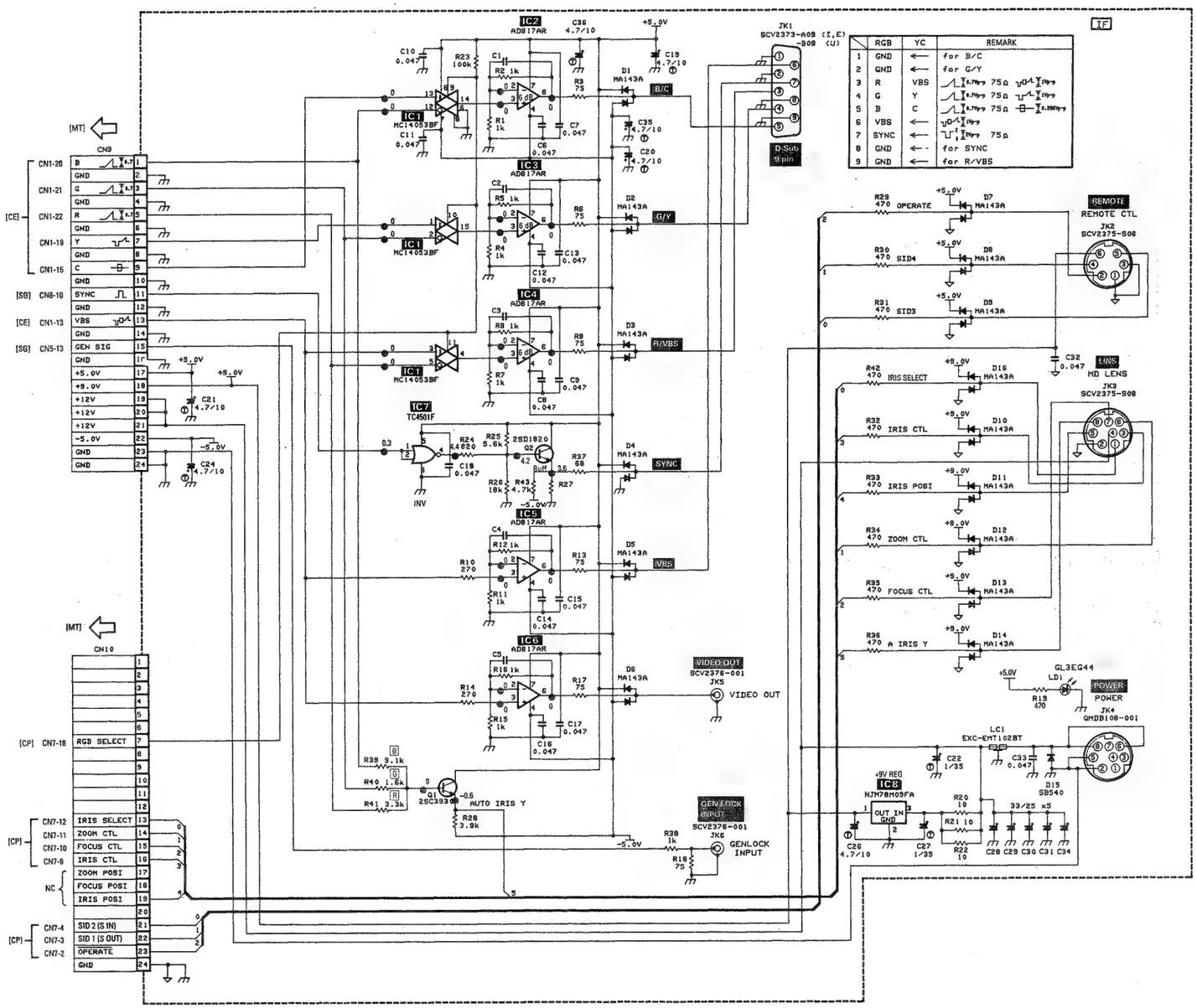


— Side B —



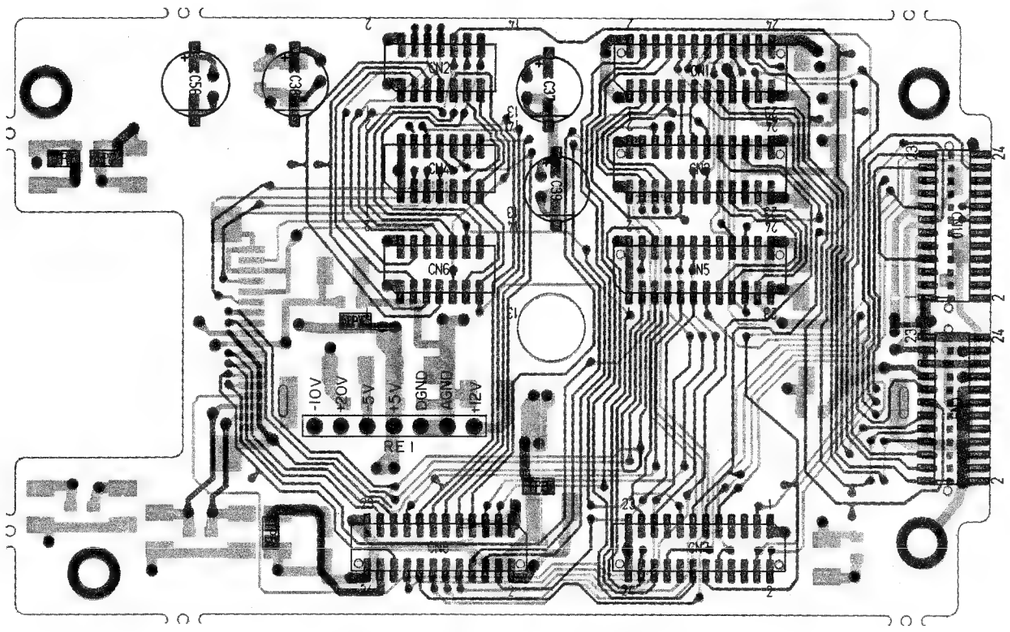
3-22

3.22 IF BOARD SCHEMATIC DIAGRAM 10

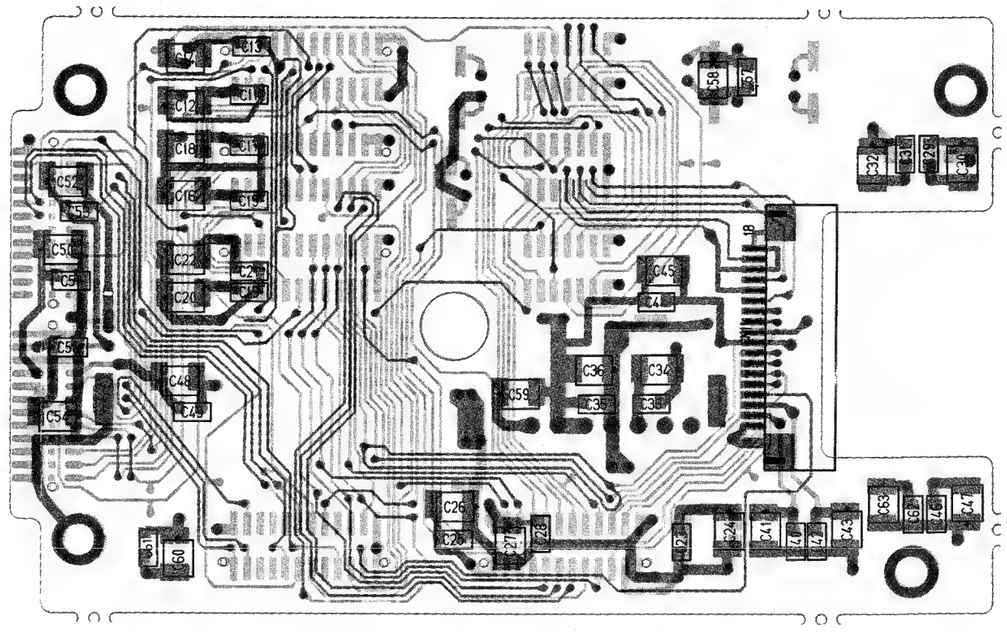


3.23 MT CIRCUIT BOARD

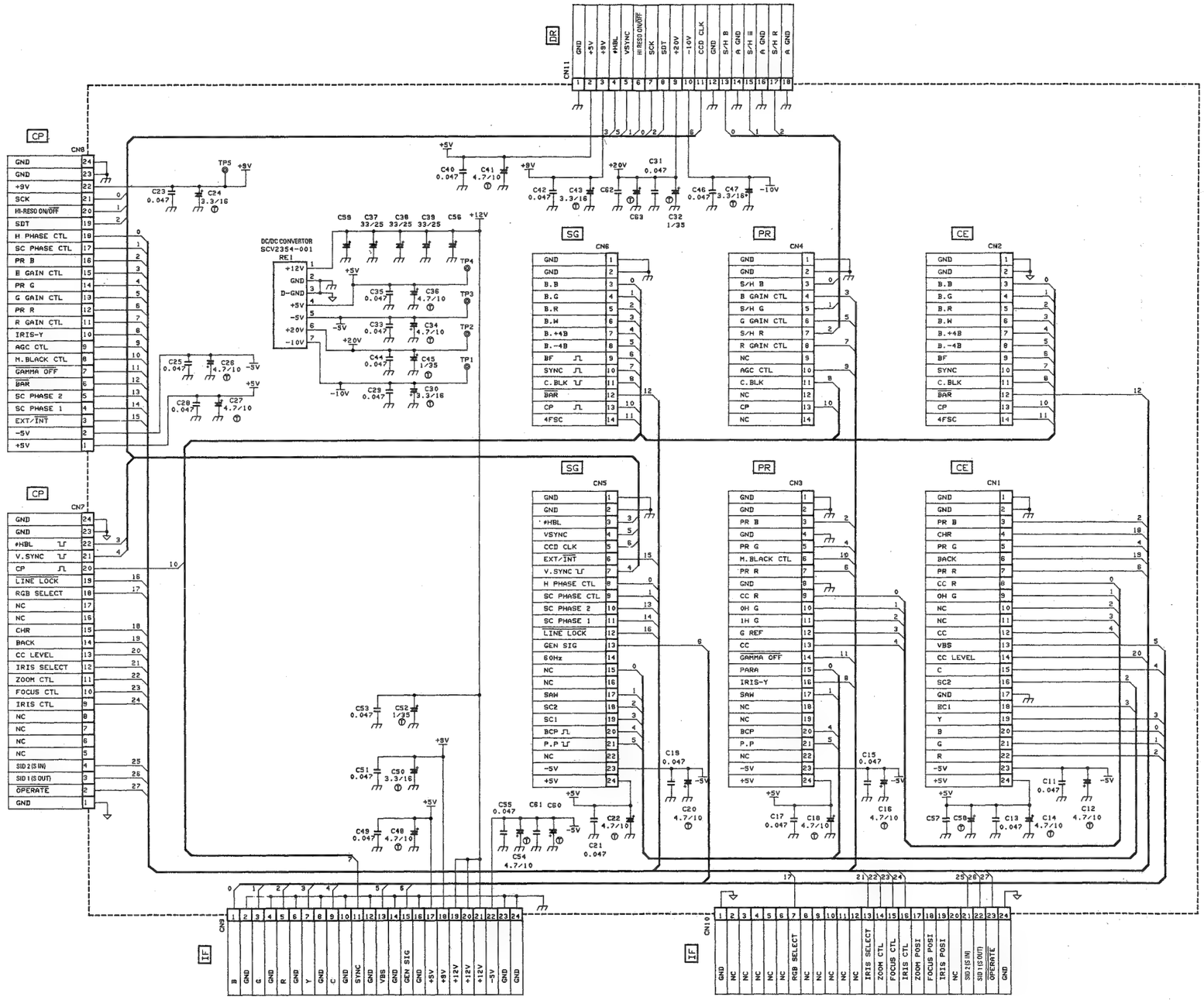
— Side A —



— Side B —



3.24 MT BOARD SCHEMATIC DIAGRAM 11



3-25

3.25 OVERALL WIRINGS

NOTE: THE CONNECTIONS OF THIS SCHEMATIC DIAGRAM INDICATES AS FOLLOWS ;

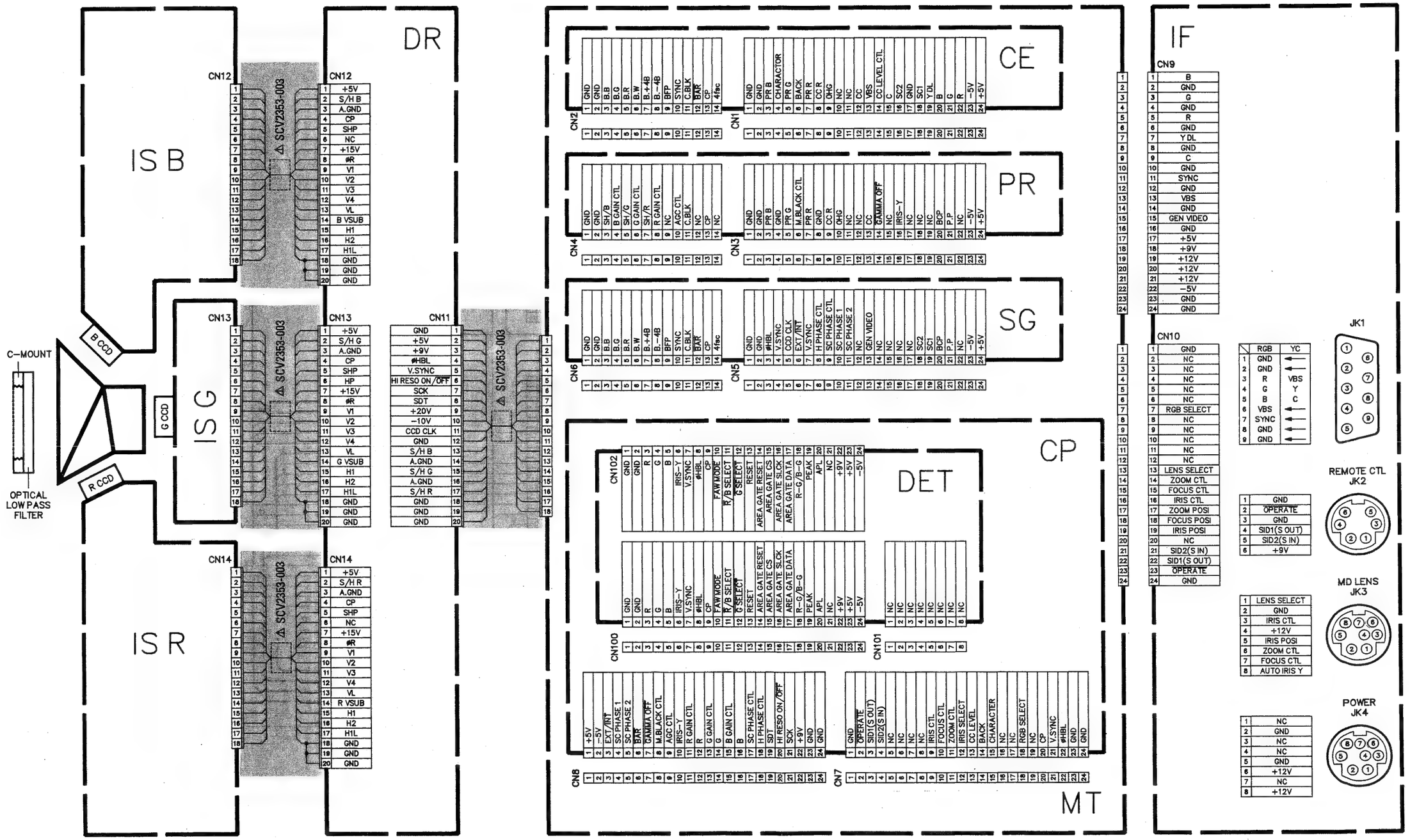
REMOVAL CONNECTOR

CN1		CN1	
SIGNAL 1	1	1	SIGNAL 1
SIGNAL 2	2	2	SIGNAL 2
SIGNAL 3	3	3	SIGNAL 3

BOARD TO BOARD CONNECTOR

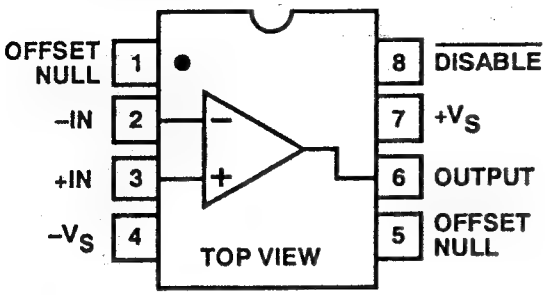
CN1		CN1	
SIGNAL 1	1	1	SIGNAL 1
SIGNAL 2	2	2	SIGNAL 2
SIGNAL 3	3	3	SIGNAL 3

● Shaded (⚠)parts are critical for safety.
Replace only with specified part numbers.

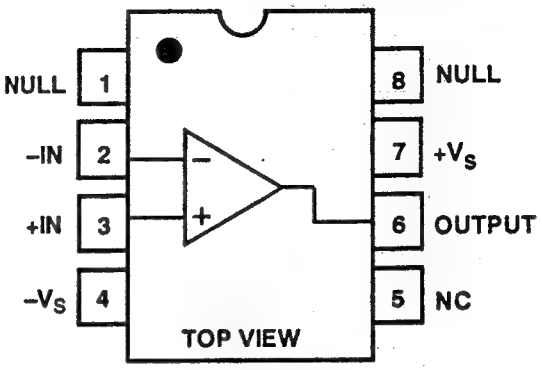


3.26 SCHEMATIC DIAGRAMS of IC's

■ AD810AR 【ANALOG DEVICES】
(Hi-Speed Low Power Op.Amp)

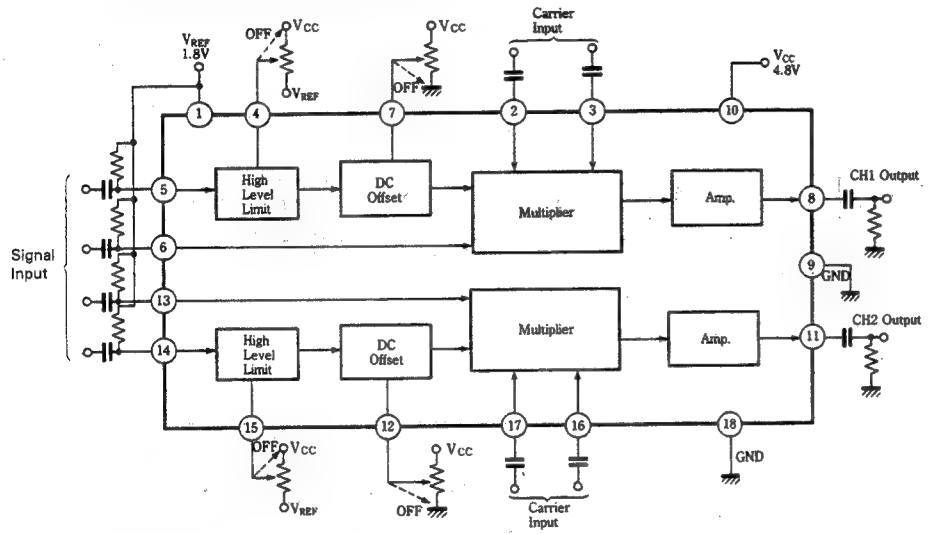


■ AD817AR 【ANALOG DEVICES】
(Hi-Speed Low Power Op.Amp)



NC = NO CONNECT

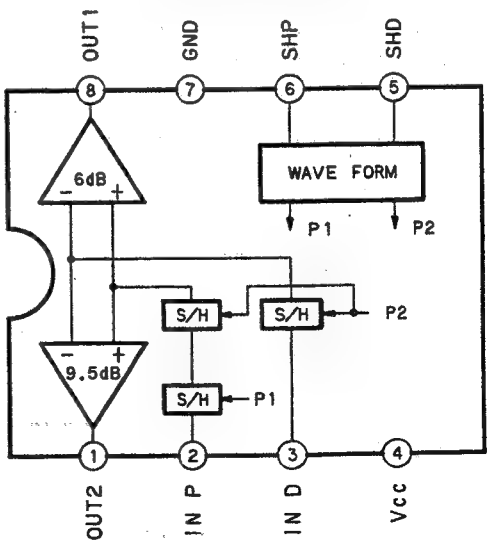
■ AN2020S 【MATSUSHITA】
(Dual Balanced Modulator)



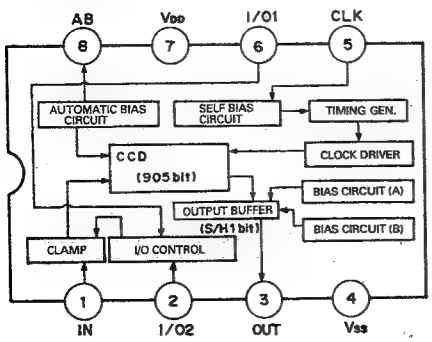
■ Pin function

Pin No.	Pin Name	Pin No.	Pin Name
1	V_{REF} (1.8V)	10	V_{CC} (4.8V)
2	CH1 Carrier Input 1	11	CH2 Output
3	CH1 Carrier Input 2	12	CH2 DC Offset
4	CH1 High Level Limit	13	CH2 Signal Input 2
5	CH1 Signal Input 1	14	CH2 Signal Input 1
6	CH1 Signal Input 2	15	CH2 High Level Limit
7	CH1 DC Offset	16	CH2 Carrier Input 2
8	CH1 Output	17	CH2 Carrier Input 1
9	GND	18	GND

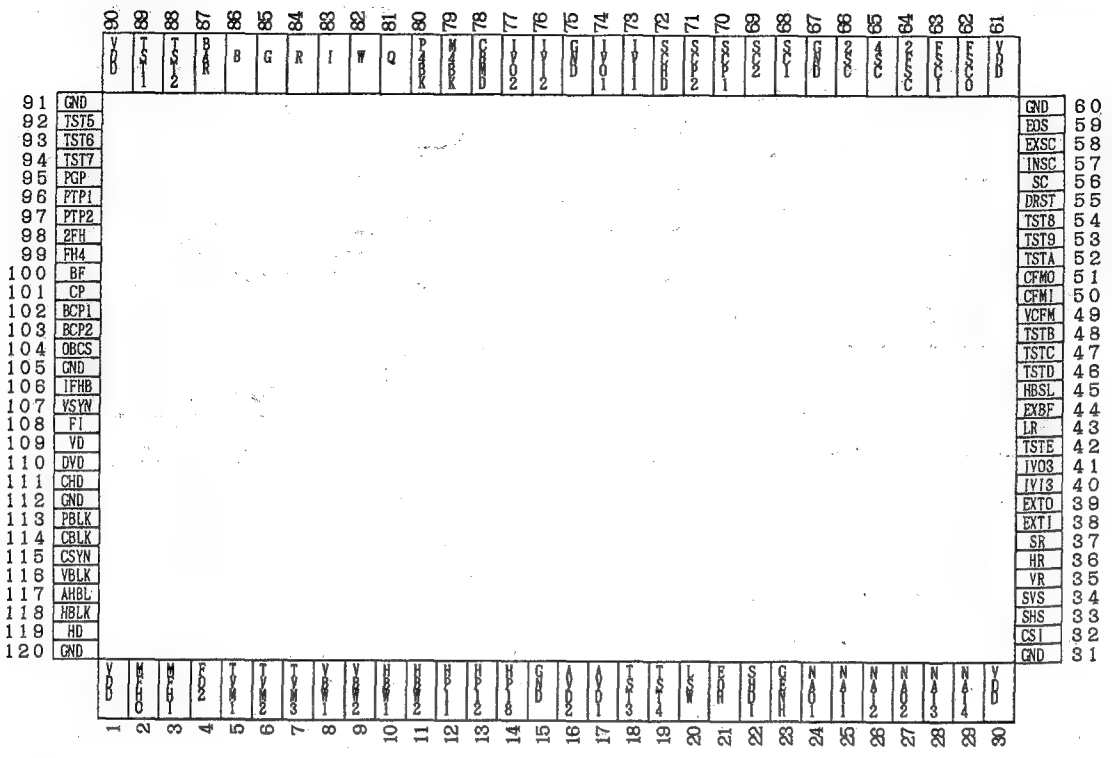
■ CXA1439M 【SONY】
(Correlated Double Sampling)



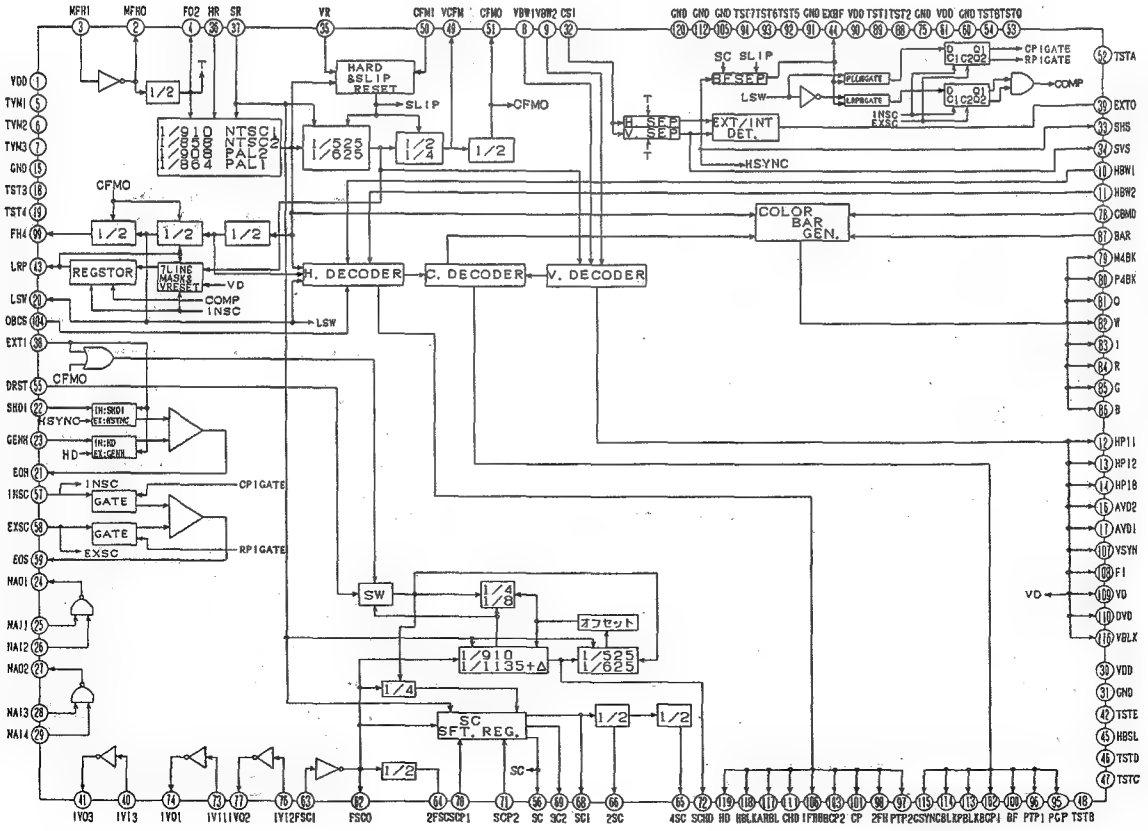
■ CXL5504M 【SONY】
(CMOS-CCD 1H Delayline For NTSC)



■ JCS0018 【JVC】
(SSG)



(TOP VIEW)

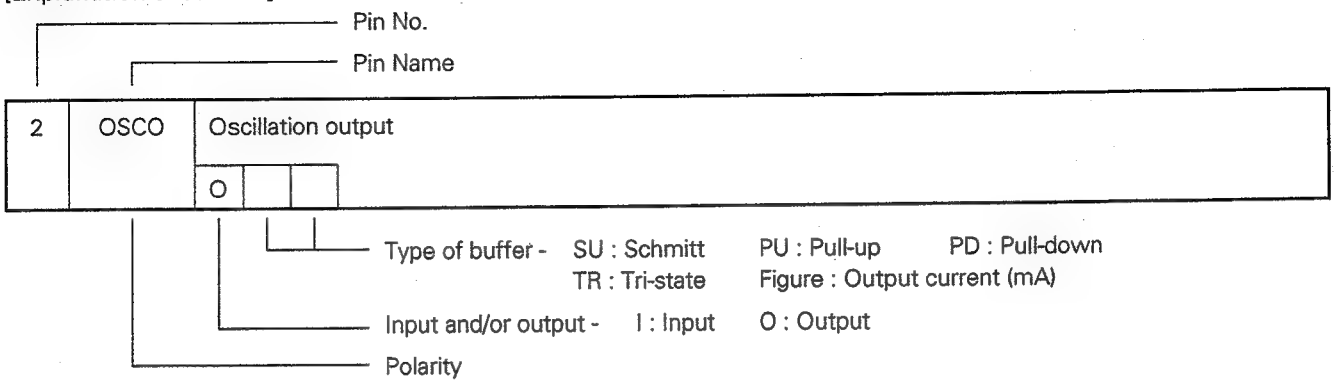


(BLOCK DIAGRAM)

● Pin function (JCS0018)

JCS0018

[Explanation of column]



No.	Symbol	Description
1	VDD	+5 V power supply
2	MFHO	Sync. pulse oscillation output • Built-in oscillator output terminal O
3	MFHI	Sync. pulse oscillation input • Built-in oscillator input terminal I
4	FO2	1/2 divided output • 1/2 divided output of sync. pulse oscillator O 9
5	TVM1	TV mode 1 I PU
6	TVM2	TV mode 2 I PU
7	TVM3	TV mode 3 I PU
8	VBW1	V. blanking control 1 I PU
9	VBW2	V. blanking control 2 I PU
10	HBW1	H. blanking control 1 I PU
11	HBW2	H. blanking control 2 I PU

	NTSC 1 1820 FH	NTSC 2 1716 FH	PAL 2 1816 FH	PAL 1 1728 FH	PAL M 1716 FH	SECAM 1716 FH
TVM1	L	H	L	H	L	H
TVM2	L	L	H	H	L	L
TVM3	L	L	L	L	H	H

VBW 1	L	H	L	H
VBW 2	L	L	H	H
NTSC 1	21H	20H	19H	18H
NTSC2	21H	20H	19H	18H
PAL 1	26H	25H	24H	23H
PAL 2	26H	25H	24H	23H
PAL M	21H	20H	19H	18H
SECAM	26H	25H	24H	23H

HBW 1	L	H	L	H
HBW 2	L	L	H	H
NTSC 1	157T	156T	154T	152T
NTSC2	148T	147T	146T	152T
PAL 1	162T	159T	156T	153T
PAL 2	170T	167T	164T	161T
PAL M	148T	147T	146T	144T
SECAM	162T	159T	156T	153T

No.	Symbol	Description
12	HP11 	H. pulse 11 O | 9 | • Active at 11H, 13H, 15H and 17H
13	HP12 	H. pulse 12 O | 9 | • Active at 12H and 14H
14	HP18 	H. pulse 18 O | 9 | • Active at 18H
15	GND	Grounding
16	AVD2 	Pre-vertical drive 2 O | 9 | • V. drive pulse whose phase is 8H ahead of VD. • Functions as subcarrier blanking pulse in SECAM system.
17	AVD1 	Pre-vertical drive 1 O | 9 | • V. drive pulse whose phase is 1H ahead of VD
18	TST3 —	Test pin 3 I | PU | • Should be open in general.
19	TST4 —	Test pin 4 I | PU | • Should be open in general.
20	LSW 	Line switch O | 9 | • Half divided output of FH. • Switches color difference signal of adjacent lines at angle of 180° in PAL. system.
21	EOH —	H. sync digital phase comparison output O | TR | 13 • When internal HD is ahead of leading edge of SHDI in phase : Low level • When internal HD is behind of leading edge of SHDI in phase: High level • When internal HD accords with leading edge of SHDI in phase: High impedance
22	SHDI 	H. sync digital phase comparison input (Trailing detection) I | SH | PU | • To input H. driving pulse originating from subcarrier. • EXTI is effective at Low level, otherwise SHS (No. 33) is internally connected.
23	GENH 	H. sync digital phase comparison input (Trailing detection) I | SH | PU | • Input for external sync, H. sync and phase adjustment. • EXTI is effective at High level, otherwise HD (No. 119) is internally connected.
24	NAO1 —	NAND output 1 O | 9 | • To output NAI1 (No. 25) and NAI2 (No. 26) signals.
25	NAI1 —	NAND input 1 I | | | • When this is not in use, fix the level.
26	NAI2 —	NAND input 2 I | | | • When this is not in use, fix the level.
27	NAO2 —	NAND output 2 O | 9 | • To output NAI3 (No. 28) and NAI4 (No. 29) signals.

No.	Symbol	Description
28	NAI3	NAND input 3 I • When this is not in use, fix the level.
29	NAI4	NAND input 4 I • When this is not in use, fix the level.
30	VDD	+5 V power supply
31	GND	Grounding
32	CSI	External composite sync signal input I SH PU • To input external composite sync signal for H. separation, V. separation and detection of external signal input.
33	SHS	H-separated sync signal O 9 • To output signal that is horizontally separated from external composit e sync signal. • 1/2 equalizing pulse is not contained.
34	SVS	V-separated sync signal O 9 • To output signal that is vertically separated from external composit e sync signal. • 1/2 equalizing pulse is not contained.
35	VR	V. reset I PU • External sync input by the slip system. • When it is input in V. sync period, it is hard reset. Input in the other period stops the internal counter for a period corresponding to the pulse width.
36	HR	H. reset I PU • Presets horizontal component 1T before the rise of HD with absorption of jitter within 140 ns. However, operation is not secured against continuous input.
37	SR	System reset I PU • Forcibly initializes inside of IC regardless of internal and external synchronization. • VR and HR inputs are invalid, and jitters within 140 ns are absorbed.
38	EXTI	Internal and external sync setting input I PD • L : Internal sync setting • H : External sync setting
39	EXTO	Internal and external sync setting output O 9 • L : CSI input absent - After absence of SVS is detected, no SHS is detected for 8 fields. • H : CSI input present- SVS is detected and 200 or more SHS's are detected in a vertical period.
40	IVI3	Inverter input 3 I • When this is not in use, fix the level.
41	IVO3	Inverter output 3 O 9 • Inversion output of IVI3 (No. 40)
42	TSTE	Test pin E I PU • Should be open in general.
43	LR	Line reset O 9 • When EXTI is in ext. sync (High level), setting signal is supplied to LSW. • From phase comparison between external burst and internal burst: Internal burst is delayed : Low level output (for SC6 clocks) Internal burst is advanced or the same : High level output • Phase comparison is not performed for 7H after output.

No.	Symbol	Description
44	EXBF 	Burst flag separation output O 9 • With detection of 1 or more H. sync pulse from CSI input, this outputs a pulse whose pulse width is equivalent to 8 cycles of subcarrier.
45	HBSL —	H. blanking select I PU • IFHB (No. 106) output point switching terminal • L : System delay by 900 ns approx. H : System delay by 450 ns approx.
46	TSTD —	Test pin D O 9 • Should be open in general.
47	TSTC —	Test pin C O 9 • Should be open in general.
48	TSTB —	Test pin B I PU • Should be open in general.
49	VCFM 	VTR color frame O 9 • Color frame for exclusive use of VTR For NTSC 1, NTSC 2, PAL M : 2-field period For PAL 1, PAL 2, SECAM : 4-field period
50	CFMI 	Color frame input I SH PU • Active with EXTI at High level. • Used for color frame control in external sync. • Resets synchronous circuits by the slip system.
51	CFMO 	Color frame output O 9 • Pulse output at the beginning of each color frame. For NTSC 1, NTSC 2 : 4-field period For PAL 1, PAL 2, PAL M, SECAM : 8-field period
52	TSTA —	Test pin A I PU • Should be open in general.
53	TST9 —	Test pin 9 I PU • Should be open in general.
54	TST8 —	Test pin 8 I PU • Should be open in general.
55	DRST —	Direct reset I PU • To switch reset operation of horizontal counter for subcarrier as EXTI is at Low level. High level : Resetting horizontal counter synchronizing with color frame input. Low level : Resetting with color frame input only.
56	SC 	Subcarrier output O 9 • To monitor subcarrier signal connected internally with digital phase comparator. Same phase as that of SC1 (No. 68) when its phase is 0°.
57	INSC 	Internal subcarrier input I • Connected with SC (No. 56). • Active with EXBF at Low level. Rise-up is detected.
58	EXSC 	External subcarrier input I • Active with EXBF at Low level. Rise-up is detected.

No.	Symbol	Description
59	EOS —	Digital phase comparison output for subcarrier O | TR | 13 • When internal SC is ahead of leading edge of EXSC in phase : Low level • When internal SC is behind of leading edge of EXSC in phase : High level • When internal SC accords with leading edge of EXSC in phase : High impedance
60	GND	Grounding
61	VDD	+5 V power supply
62	FSCO	Oscillator output for subcarrier O | |
63	FSCI	Oscillator input for subcarrier I | |
64	2FSC	Twofold subcarrier output O | 13 | • Half divided output of oscillator for subcarrier
65	4SC	1/4 subcarrier output O | 9 | • Output having a quarter frequency of subcarrier
66	2SC	1/2 subcarrier output O | 9 | • Output having a half frequency of subcarrier
67	GND	Grounding
68	SC1	Subcarrier 1 O | 9 | • Subcarrier frequency output. • Phase is switched by SCP1 and SCP2. • Not inverted every 1H in PAL.
69	SC2	Subcarrier 2 O | 9 | • Subcarrier frequency output whose phase is ahead of SC1 at angle of 90°. • Phase is switched by SCP1 and SCP2. • Inverted exactly (180°) every 1H in PAL.
70	SCP1 —	Subcarrier select 1 I | PD |
71	SCP2 —	Subcarrier select 2 I | PD |

SCP2	SCP1	SC1	SC2
L	L	0°	90° ahead (270°)
L	H	90°	90° ahead (0°)
H	L	180°	90° ahead (90°)
H	H	270°	90° ahead (180°)

Expressions of SC2 are relative values to SC1.

72	SCHD	Subcarrier H. driver O | 13 | • Horizontal driver originating from subcarrier frequency.
73	IVI1 —	Inverter input 1 I | | • When this is not in use, fix the level.
74	IVO1 —	Inverter output 1 O | 9 | • Inversion output of IVI1 (No. 73)
75	GND	Grounding
76	IVI2 —	Inverter input 2 I | | • When this is not in use, fix the level.

No.	Symbol	Description
77	IVO2 —	Inverter output 2 O 9 • Inversion output of IVI2 (No. 76)
78	CBMD —	SMPTE/FULL I PU • To switch color bars signal between SMPTE and FULL modes. L : FULL FIELD mode Color bars signal is effective only at Low level. H : SMPTE mode
79	M4BK	Color bar signal O 9
80	P4BK	Color bar signal O 9
81	Q	Color bar signal O 9
82	W	Color bar signal O 9
83	I	Color bar signal O 9

	BAR	CBMD	I	W	Q	P4BK	M4BK
NTSC 1 NTSC 2	H L L	X H L	L ○ L	L ○ (75%W) L	L ○ L	L ○ L	L ○ L
PAL 1 PAL 2	H L L	X H L	L ○ L	L ○ (75%W) ○ (100%W)	L ○ L	L ○ L	L ○ L
PAL M	H L L	X H L	L ○ L	L ○ (75%W) ○ (100%W)	L ○ L	L ○ L	L ○ L
SECAM	H L L	X H L	L ○ L	L ○ (75%W) L	L ○ L	L ○ L	L ○ L

○ = Present

84	R	Color bar signal O 9			
85	G	Color bar signal O 9			
86	B	Color bar signal O 9			

	BAR	CBMD	B	G	R
NTSC 1 NTSC 2	H L	X X	L Effective	L Effective	L Effective
PAL 1 PAL 2	H L	X X	L Effective	L Effective	L Effective
PAL M	H L	X X	L Effective	L Effective	Effective
SECAM	H L	X X	L Effective	L Effective	L Effective

87	BAR —	Color bars control (ON/OFF) I PU	

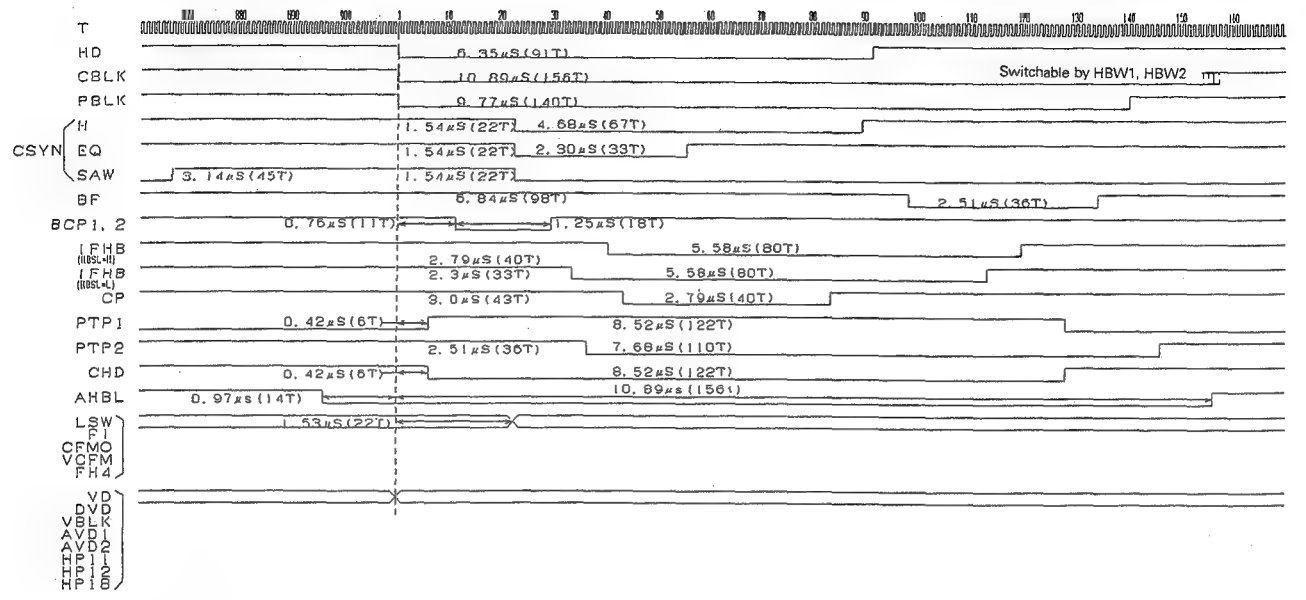
BAR	R, G, B, I, Q, W, P4BK, M4BK
L	Active
H	Fixed at Low level.

88	TST2 —	Test pin 2 I PU • Should be open in general.
89	TST1 —	Test pin 1 I PU • Should be open in general.
90	VDD	+5 V power supply
91	GND	Grounding
92	TST5 —	Test pin 5 I PU • Should be open in general.

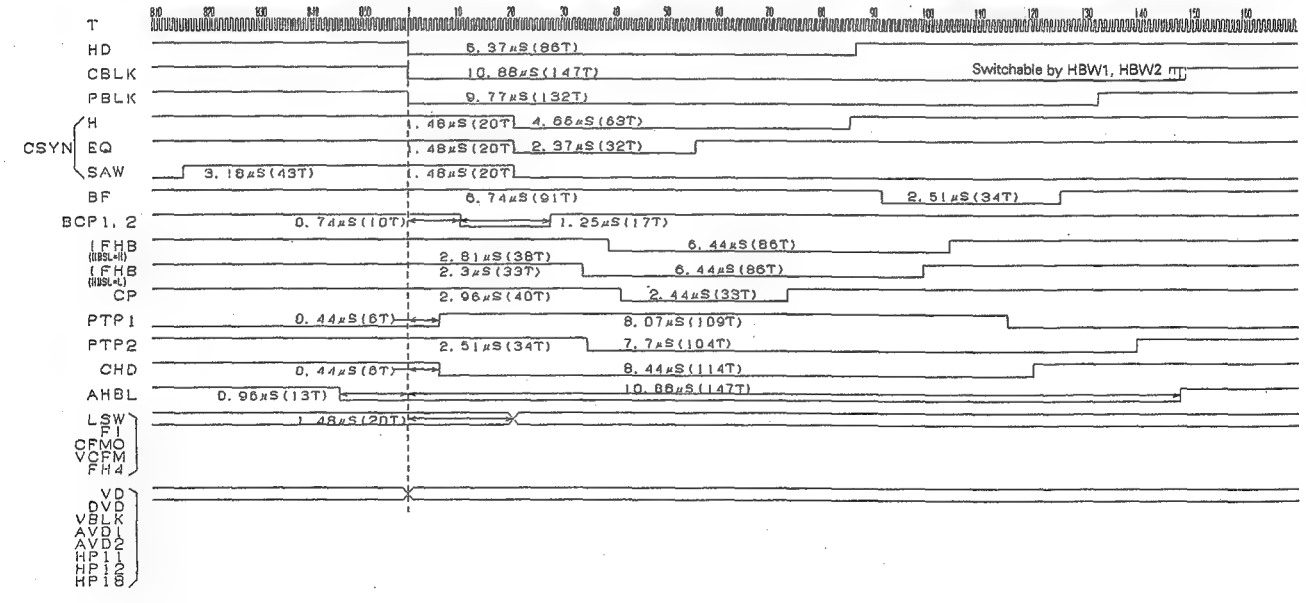
No.	Symbol	Description
93	TST6 —	Test pin 6 I PU • Should be open in general.
94	TST7 —	Test pin 7 O 9 • Should be open in general.
95	PGP	Pilot gate pulse O 9 • Equalizes voltages levels of two signals, one passed 1H delay line and the other did not pass it, to compensate attenuation by the delay line.
96	PTP1	Pilot pulse 1 O 9 • Equalizes voltages levels of two signals, one passed 1H delay line and the other did not pass it, to compensate attenuation by the delay line.
97	PTP2	Pilot pulse 2 O 9 • Used to control video level.
98	2FH	Twofold FH O 9
99	FH4	1/4FH O 9 • Half divided output of LSW. • Equivalent to 25 Hz offset signal in PAL.
100	BF	Burst flag O 9 • Specifies period to insert subcarrier into the back porch of H. sync signal. • Switches chromaticity signal every line in SECAM.
101	CP	Clamp pulse O 9 • To clamp reference voltage of black level.
102	BCP1	Black clamp pulse 1 O 9 • To fix black level of CCD output signal.
103	BCP2	Black clamp pulse 2 O 9 • To fix black level of CCD output signal (output at every H).
104	OBCS —	Optical black pulse select I PU • Switches horizontal output position of BCP1 and BCP2. L : Front output, H : Rear output
105	GND	Grounding
106	IFHB	Interface H. blanking O 9 • Pulse output whose leading and trailing edges are narrower than those of HBLK.
107	VSYN	V. sync output O 9 • V. sync signal whose pulse width is equivalent to V. EQ pulse width.
108	FI —	Field index O 9 • Field discrimination signal L : Field which HD and VD pulses accord with each other in the fall. H : Field having a time lag of 0.5H between the falls of HD and VD.
109	VD	V. drive O 9 • Pulse output at the beginning of every field. • Reference signal of vertical timing of inside operation of the set.

No.	Symbol	Description
110	DVD 	Delayed V. drive O 9 ☐ • V. drive pulse that lags VD in time controls scanning timing of camera by regulating start time of sawtooth waveform of the vertical deflection circuit.
111	CHD 	Delayed H. drive O 9 ☐ • Controls scanning timing of camera. • Regulates start time of sawtooth waveform of the vertical deflection circuit.
112	GND	Grounding
113	PBLK 	Pre-blanking O 9 ☐ • Composite blanking signal to be used in the stage of video processing. • Leading edge is narrower than that of CBLK.
114	CBLK 	Composite blanking O 9 ☐ • Horizontal and vertical composite blanking signal
115	CSYN 	Composite sync O 9 ☐ • Composite sync signal composed of HSYN, VSYN, EQ and SAW signals.
116	VBLK 	V. blanking O 9 ☐ • Vertical blanking signal whose pulse width is switchable by VBW1 and VBW2.
117	AHBL 	Prepositional H. blanking O 9 ☐ • Prepositional horizontal blanking pulse whose leading edge is in advance of HBLK.
118	HBLK 	H. blanking O 9 ☐ • Horizontal blanking pulse whose pulse width is switchable by HBW1 and HBW2.
119	HD 	H. drive O 13 ☐ • Pulse synchronizing with the beginning of every line. • Reference horizontal timing of inside operations of the set.
120	GND	Grounding

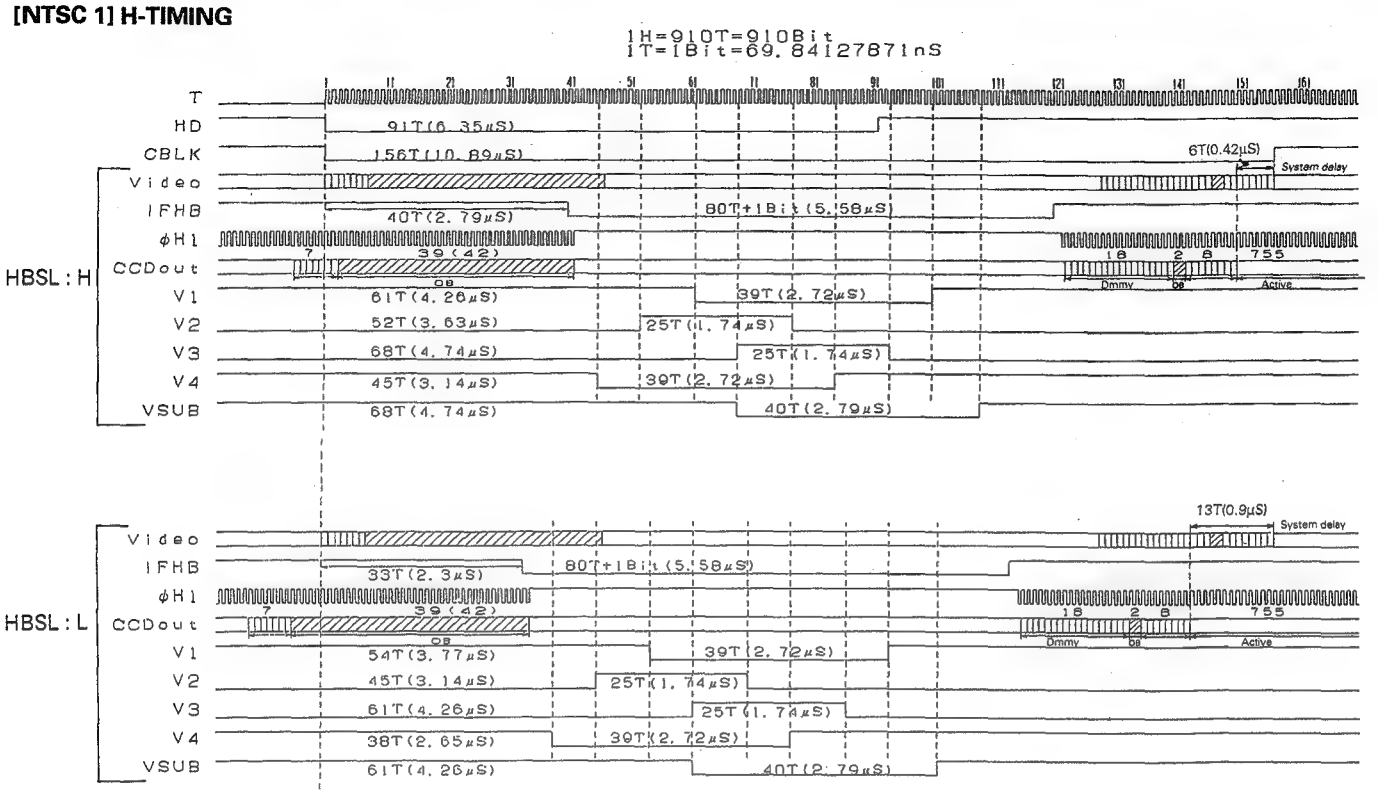
[NTSC 1] H-TIMING



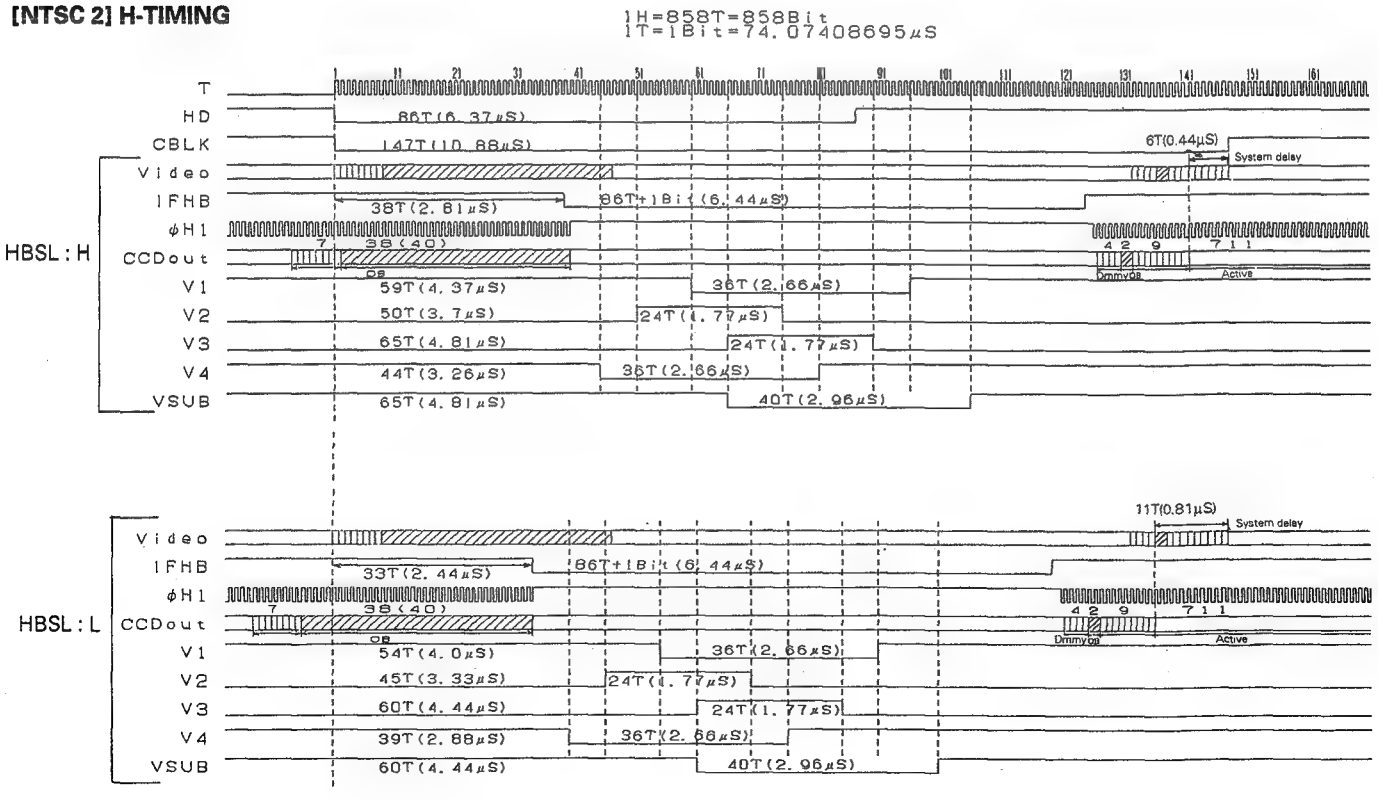
[NTSC 2] H-TIMING



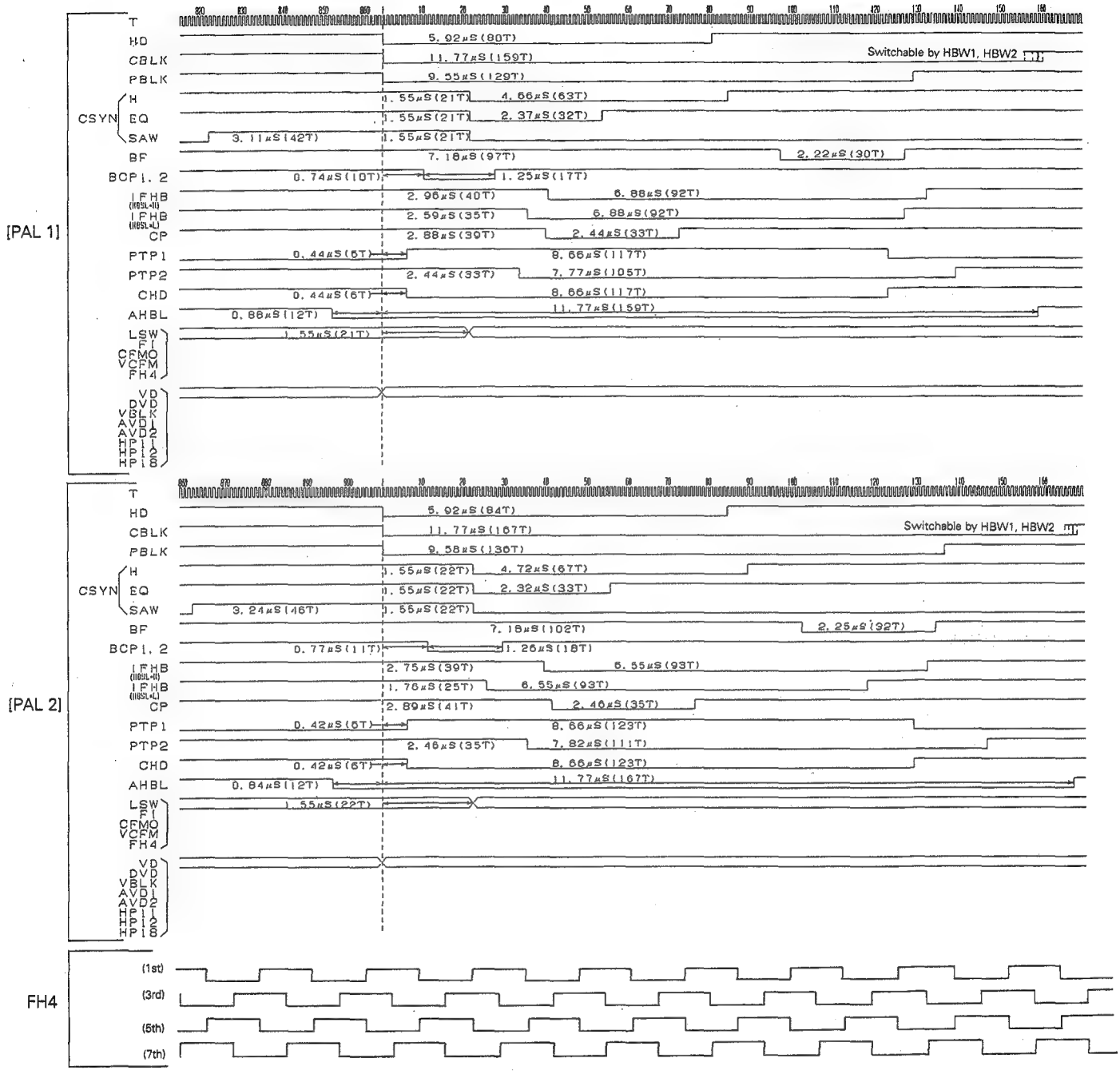
[NTSC 1] H-TIMING



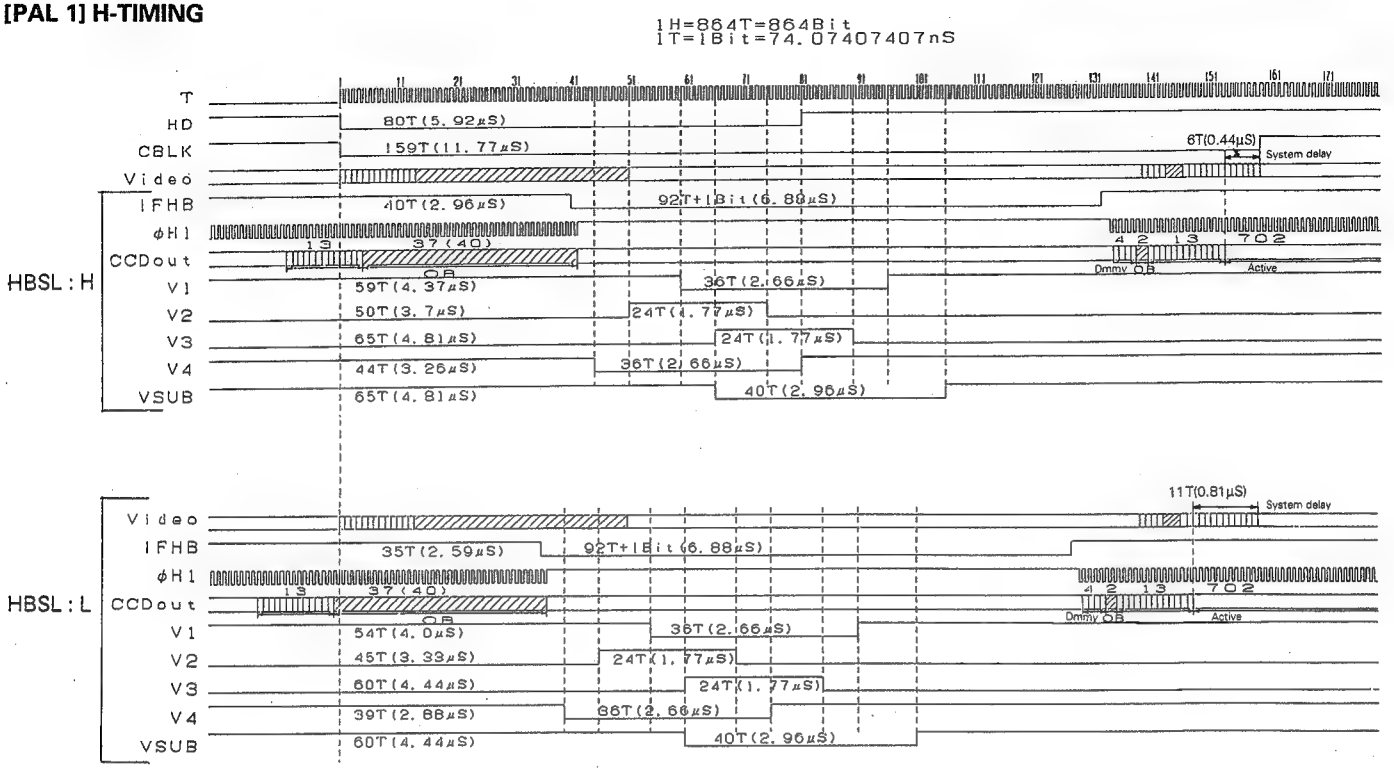
[NTSC 2] H-TIMING



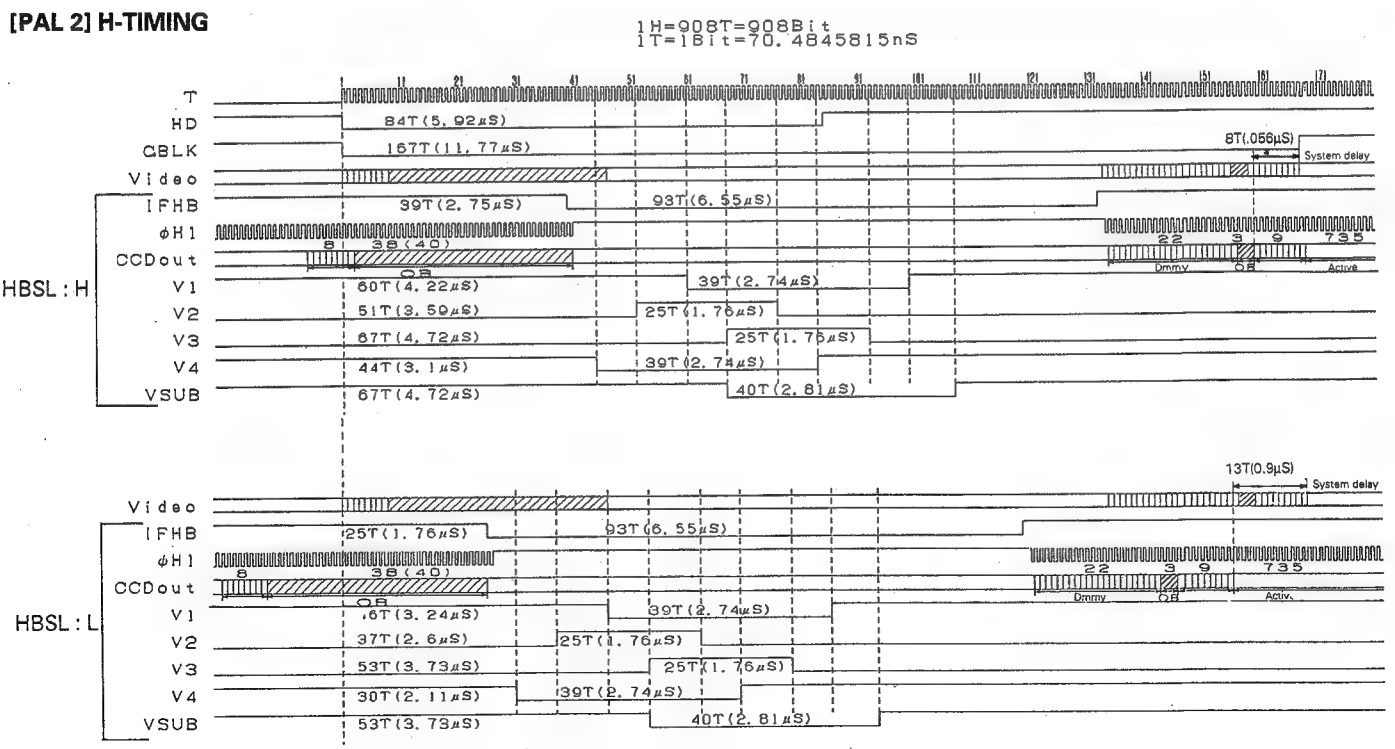
[PAL 1] H-TIMING



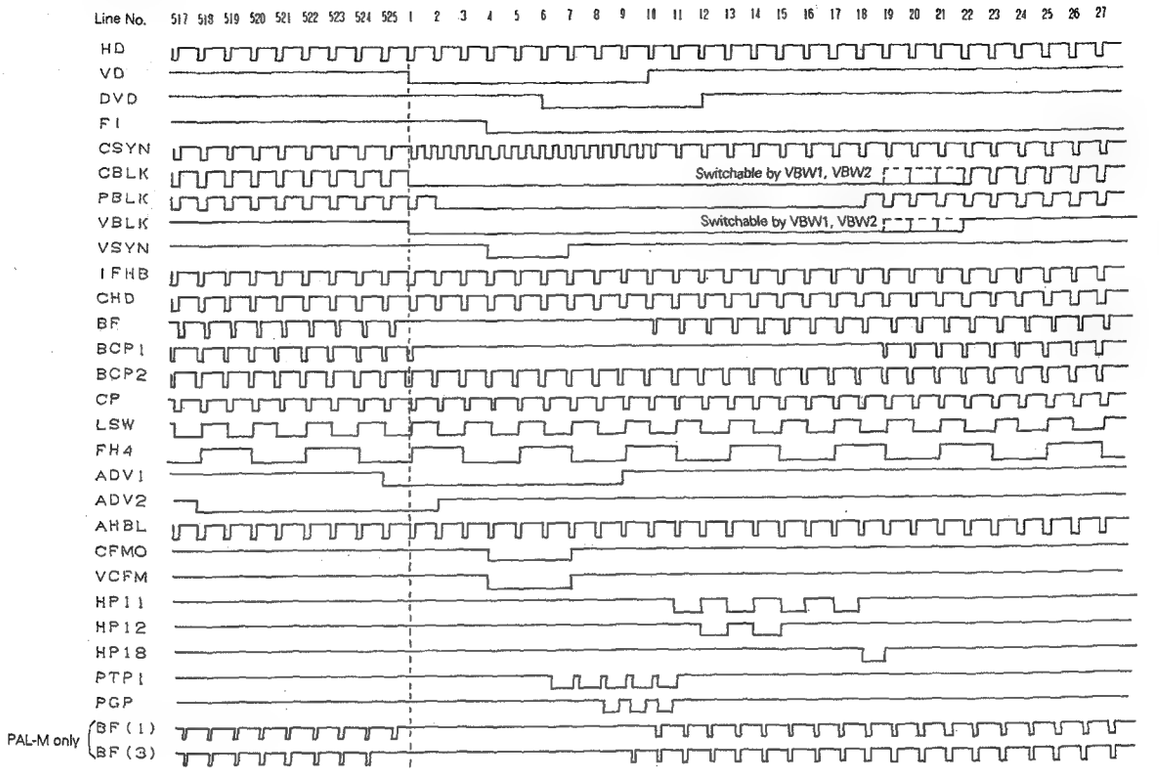
[PAL 1] H-TIMING



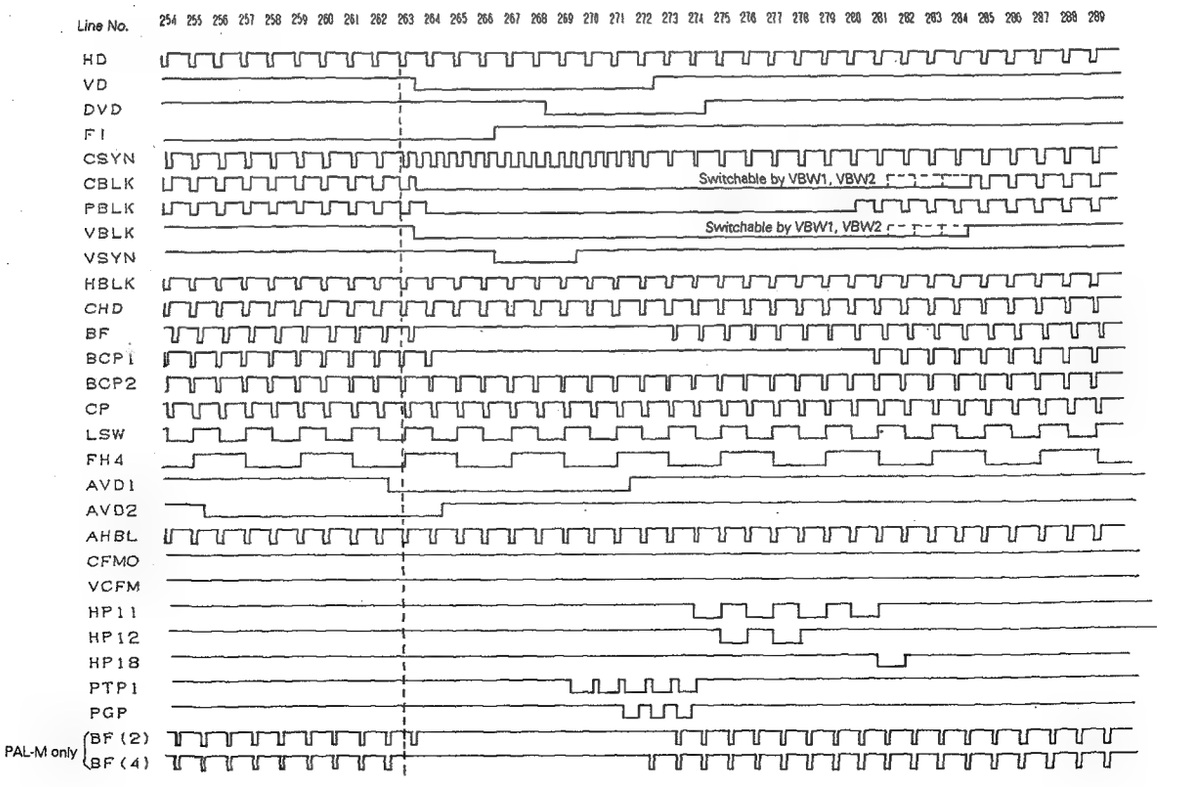
[PAL 2] H-TIMING



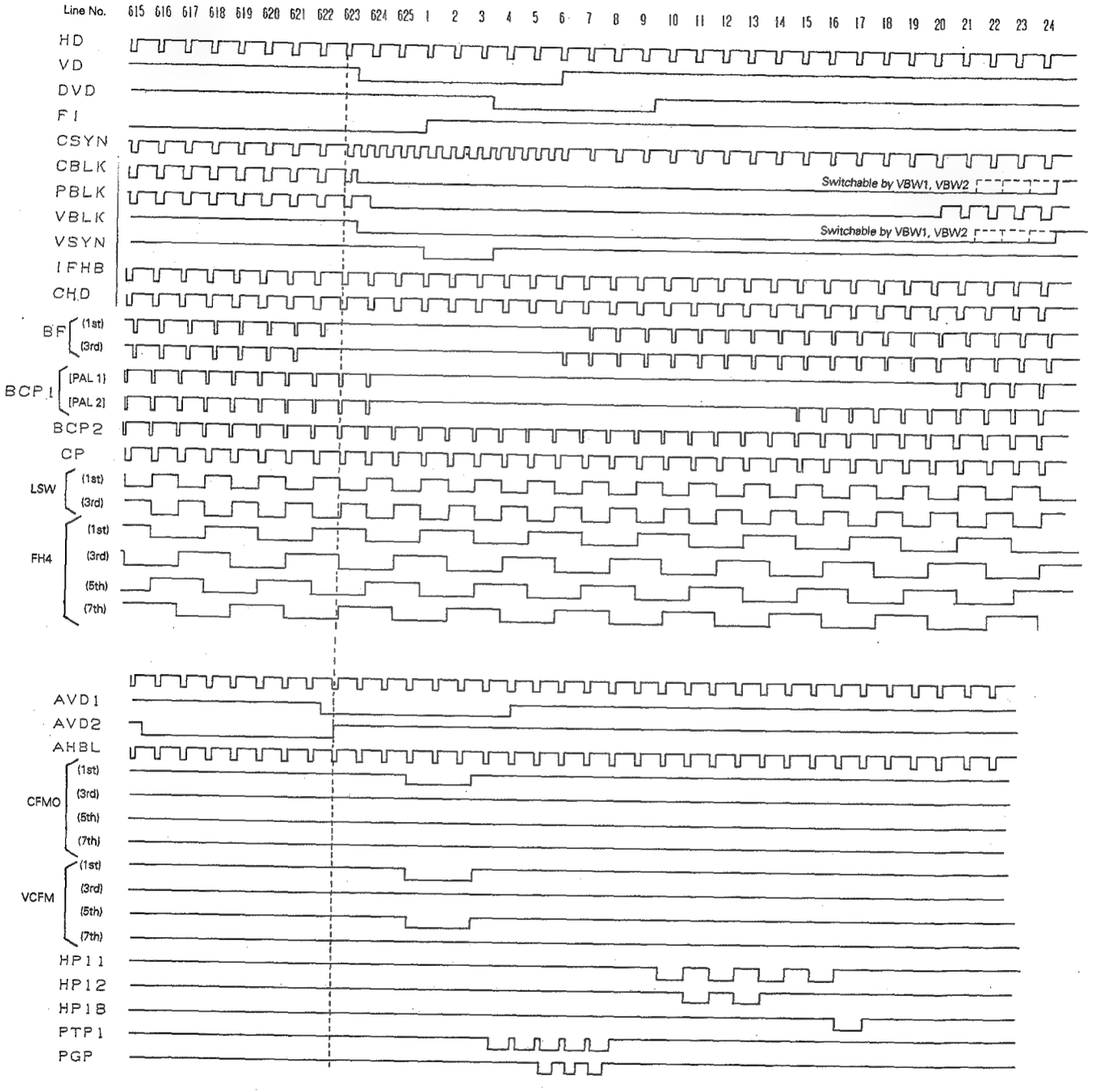
[NTSC] V-TIMING (1st field)



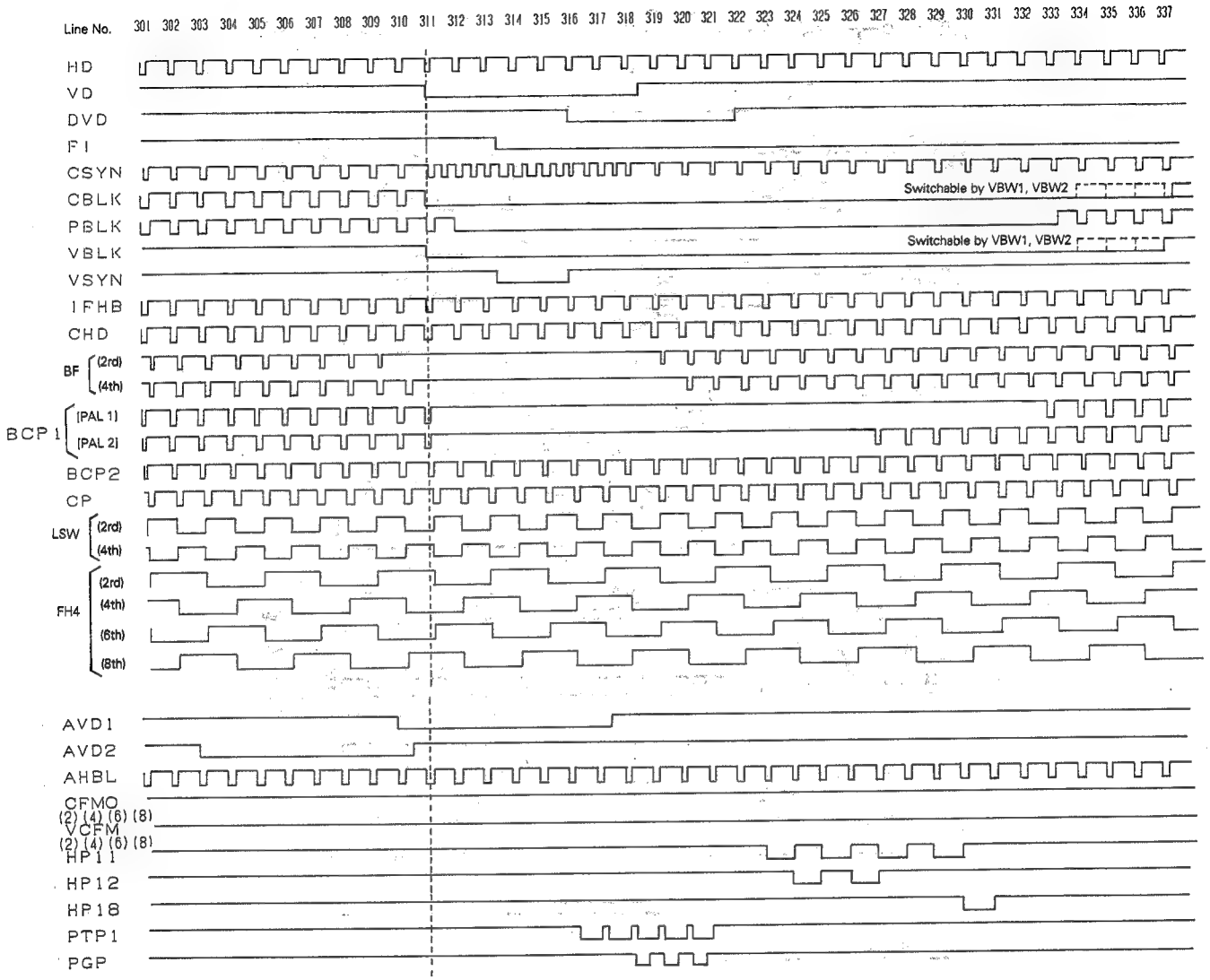
[NTSC] V-TIMING (2nd field)



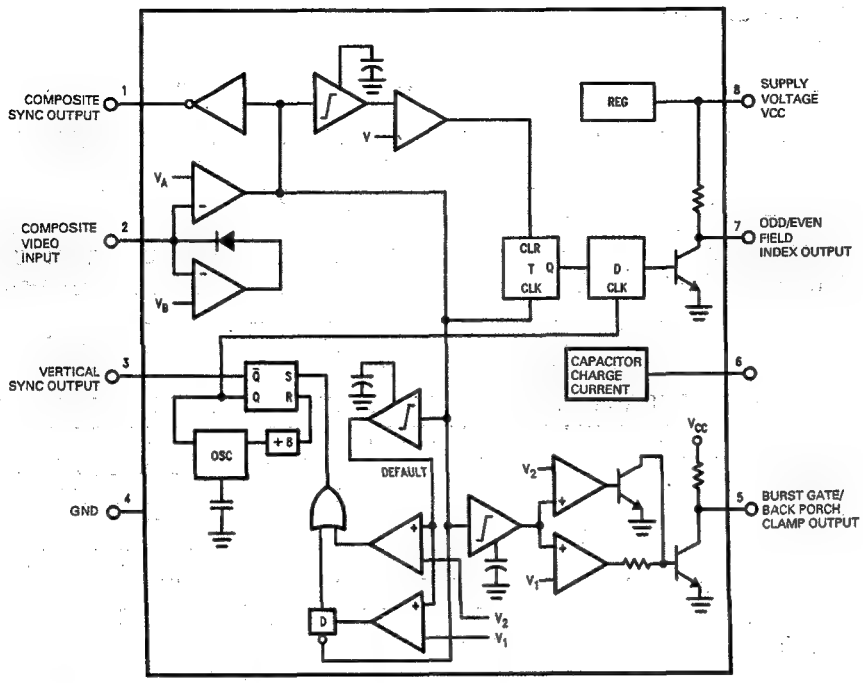
[PAL] V-TIMING (1st, 3rd, 5th, 7th field)

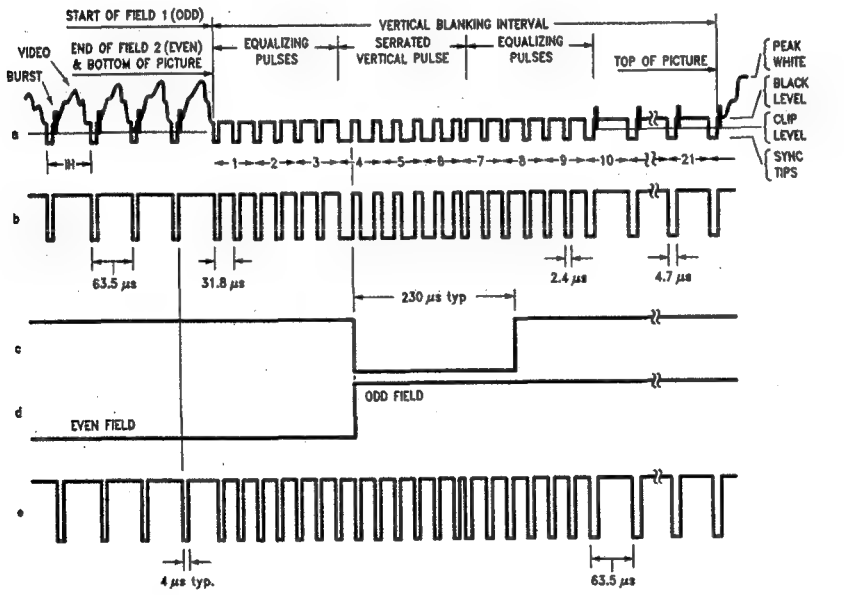


[PAL] V-TIMING (2nd, 4th, 6th, 8th field)



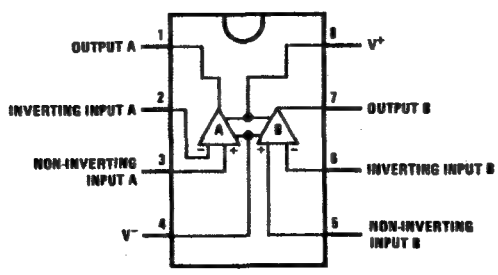
■ LM1881M 【NATIONAL SEMICONDUCTOR】
(Video Sync Separator)





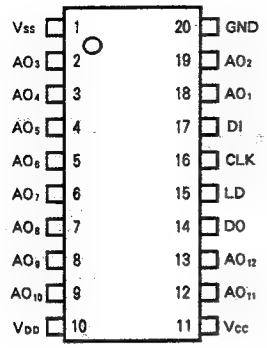
(a) Composite Video; (b) Composite Sync; (c) Vertical Output Pulse;
(d) Odd/Even Field Index; (e) Burst Gate/Back Porch Clamp

■ LMC6082IM 【NATIONAL SEMICONDUCTOR】
(Precision CMOS Dual Op.Amp)

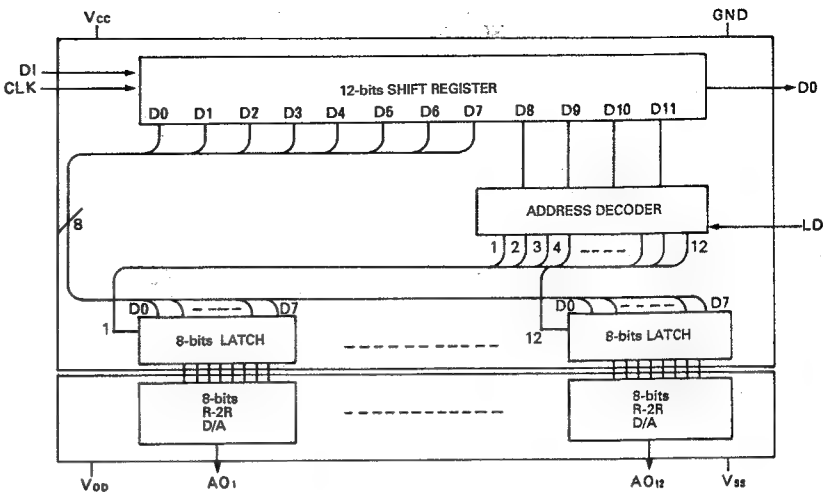


Top View

■ MB88341PF 【FUJITSU】 (D/A Converter)

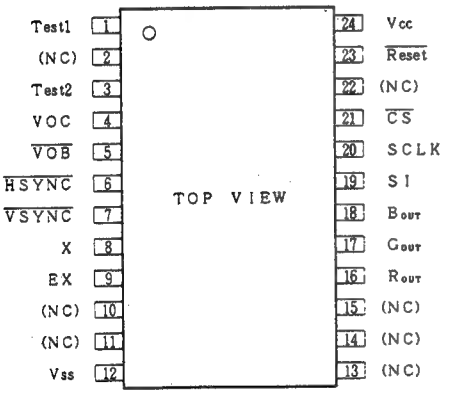


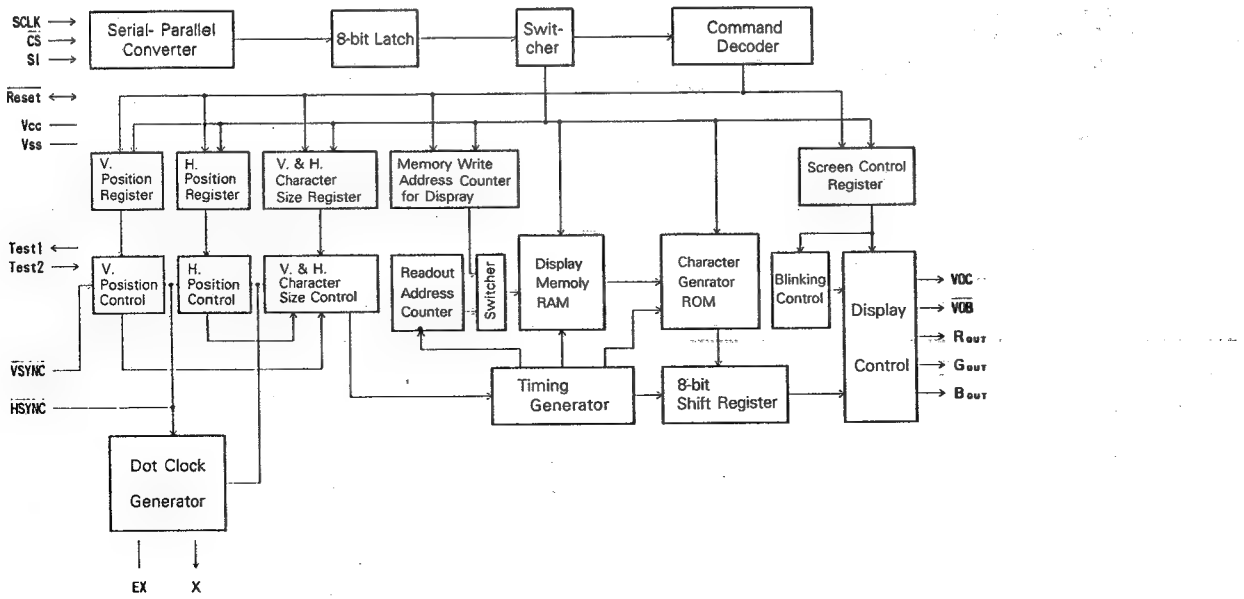
(TOP VIEW)



Symbol	Pin No. MB88341	I/O	Function
DI	17	I	For serial data (12 bits) input.
DO	14	O	For MSB data output of 12-bit shift register.
CLK	16	I	For shift clock input. Signal from DI pin is input to 12-bit shift register.
LD	15	I	With "H" input to LD pin, data of 12-bit shift register is loaded to decoder and D/A output register.
AO1 AO2 AO3 AO4 AO5 AO6 AO7 AO8 AO9 AO10 AO11 AO12	18 19 2 3 4 5 6 7 8 9 12 13	O	For 8-bits D/A output.
Vcc	11	—	Power source of MCU interface.
GND	20	—	GND of MCU interface
VDD	10	—	Power source of D/A converter.
Vss	1	—	GND of D/A converter.

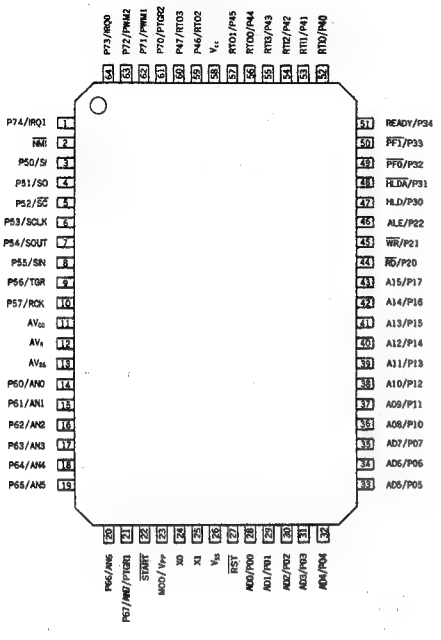
■ MB89012-109 【FUJITSU】 (TV Display Controler)



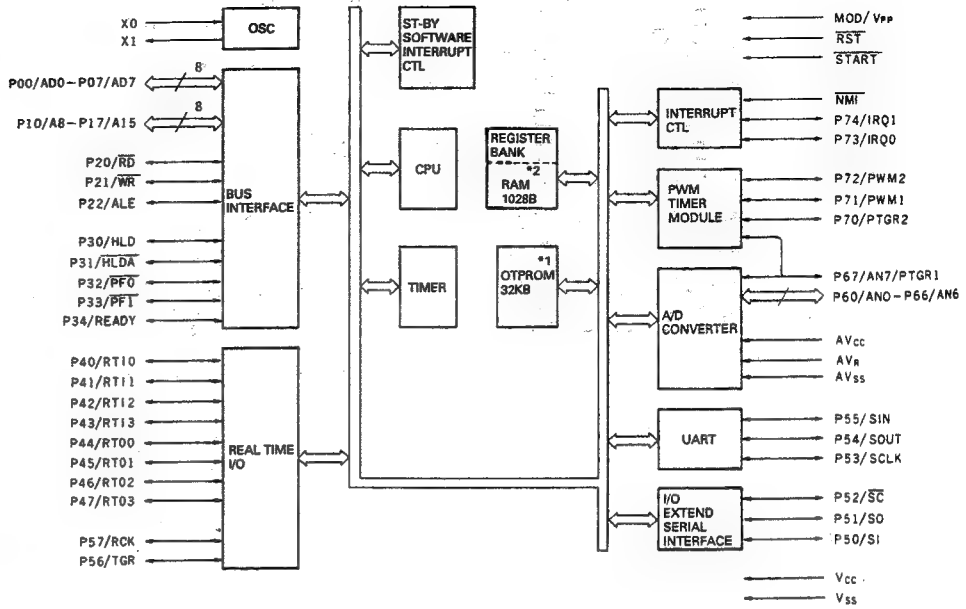


■ PLSC1080
■ MB89P718AHPF 【FUJITSU】
(PROM/EPROM)

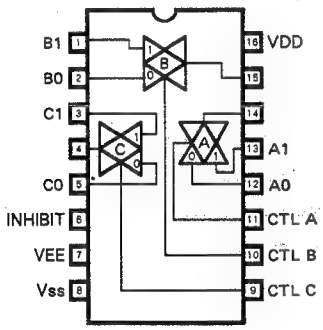
(TOP VIEW)



(FPT-64P-M06)

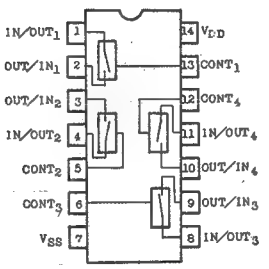


■ MC14053BF 【MOTOROLA】
(Triple 2 Channel Analog Multiplexers/ Demultiplexers)



(TOP VIEW)

■ MC14066BF 【MOTOROLA】
(Quad Bilateral Switch)

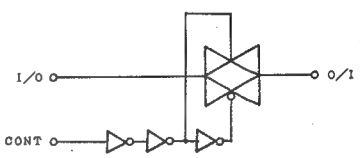


(TOP VIEW)

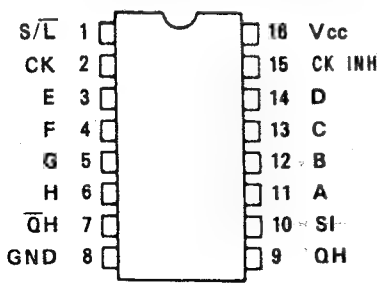
TRUTH TABLE

CONTROL	Impedance Between IN/OUT-OUT/IN *
H	0.5~5×10²Ω
L	>10⁹Ω

LOGIC DIAGRAM

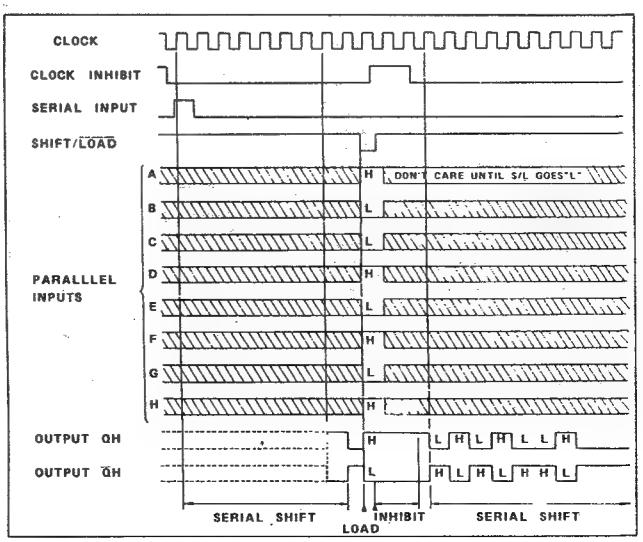


■ MC74HC165F 【MOTOROLA】
(8-Bit Serial or Parallel-In/Serial Out Shift Registers With Complementary Out)

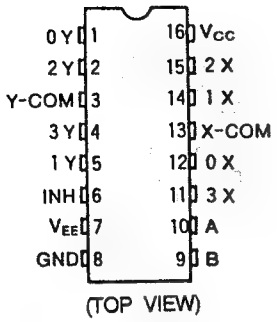


(TOP VIEW)

Timing chart



■ MC74HC4052F 【MOTOROLA】
(Dual 4-Channel Analog Multiplexer)



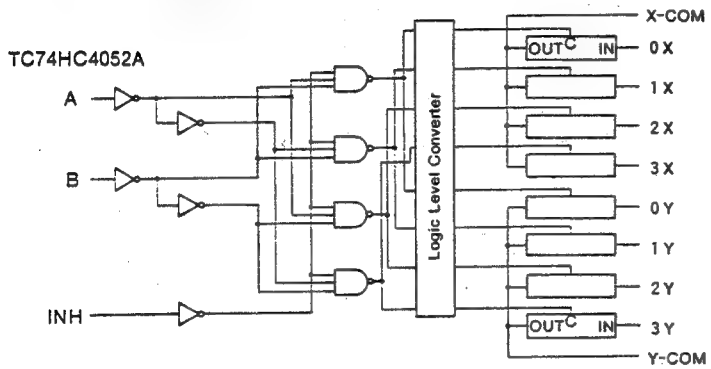
(TOP VIEW)

TRUE Table

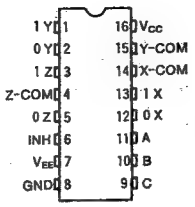
CONTROL INPUTS			"ON" CHANNEL
INHIBIT	B	A	HC4052A
L	L	L	0X, 0Y
L	L	H	1X, 1Y
L	H	L	2X, 2Y
L	H	H	3X, 3Y
H	X	X	NONE

X : DON'T CARE

TC74HC4052A



■ MC74HC4053F 【MOTOROLA】
(Triple 2-Channel Analog Multiplexer/ Demultiplexer)

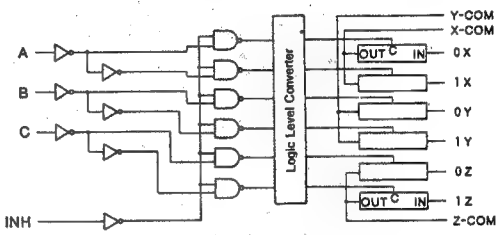


(TOP VIEW)

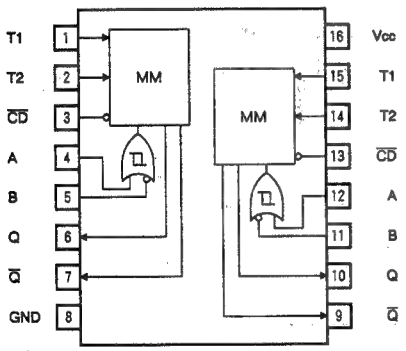
TRUE Table

CONTROL INPUTS				"ON" CHANNEL
INHIBIT	C*	B	A	HC4053A
L	L	L	L	0X, 0Y, 0Z
L	L	L	H	1X, 0Y, 0Z
L	L	H	L	0X, 1Y, 0Z
L	L	H	H	1X, 1Y, 0Z
L	H	L	L	0X, 0Y, 1Z
L	H	L	H	1X, 0Y, 1Z
L	H	H	L	0X, 1Y, 1Z
L	H	H	H	1X, 1Y, 1Z
H	X	X	X	NONE

X : DON'T CARE



■ MC74HC4538AF 【MOTOROLA】
(Dual Retriggerable Monostable Multivibrator)

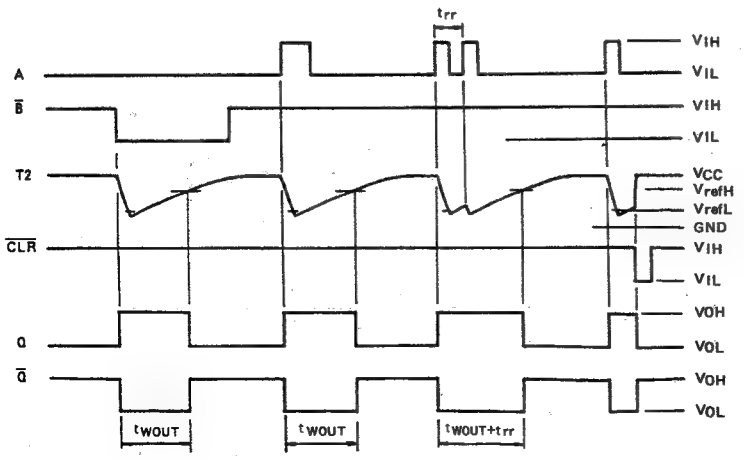


TOP VIEW

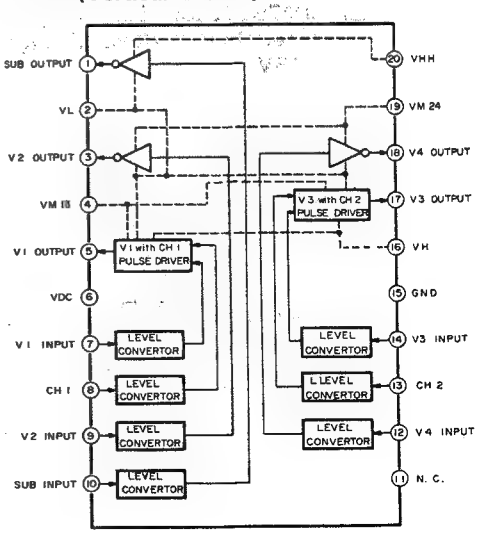
TRUE Table

INPUT			OUTPUT		NOTE
A	B	CD	Q	Q	
↑	H	H	⊓	⊔	OUTPUT ENABLE
X	L	H	L	H	INHIBIT
H	X	H	L	H	INHIBIT
L	↓	H	⊓	⊔	OUTPUT ENABLE
X	X	L	L	H	INHIBIT

X:Don't Care

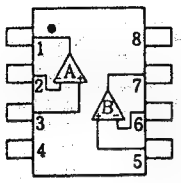


■ MN3110SA 【MATSUSHITA】
(Vertical Driver)

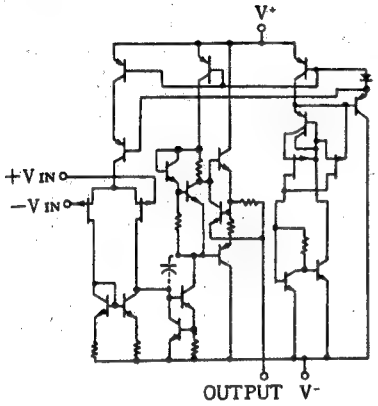


■ NJM062M 【JRC】
(J-FET Input Op.Amp)

(Top View)

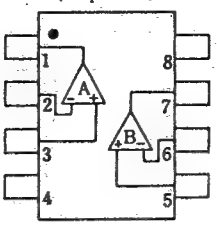


1. A OUTPUT
2. A−INPUT
3. A+INPUT
4. V-
5. B+INPUT
6. B−INPUT
7. B OUTPUT
8. V+

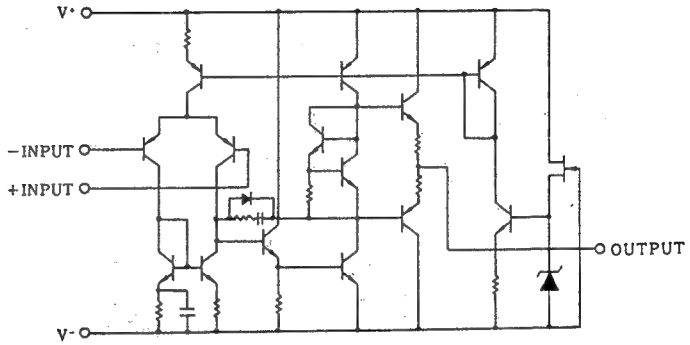


■ NJM2068MD 【JRC】
(Dual Low-Noise Op.Amp)

(Top View)

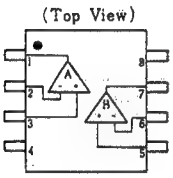


1. A OUTPUT
2. A−INPUT
3. A+INPUT
4. V-
5. B+INPUT
6. B−INPUT
7. B OUTPUT
8. V+

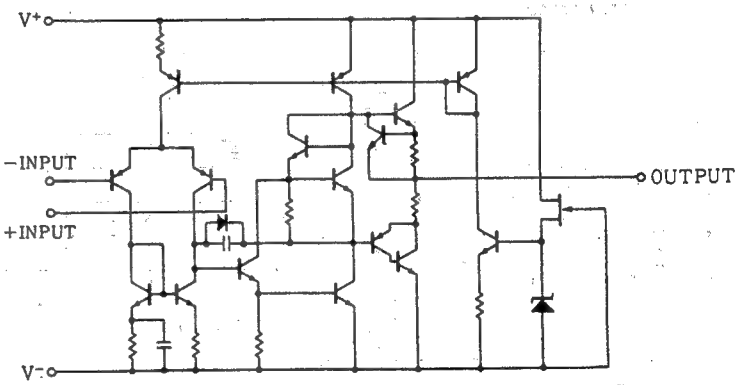


■ NJM4556M 【JRC】
(Dual High Current Op.Amp)

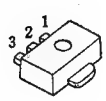
(Top View)



1. A OUTPUT
2. A−INPUT
3. A+INPUT
4. V-
5. B+INPUT
6. B−INPUT
7. B OUTPUT
8. V+



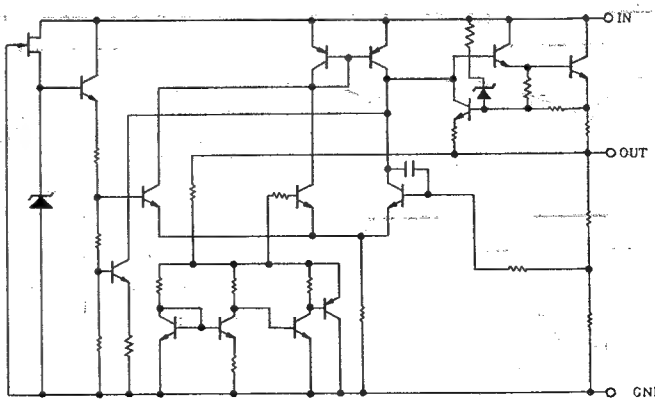
■ NJM78L15UA 【JRC】
(3-Terminal Positive Voltage Regulator (+15V))



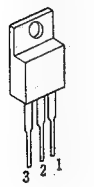
NJM78L00UA

1. OUT
2. GND
3. IN

NJM78L00A

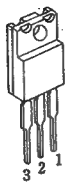


■ NJM78M09FA 【JRC】
(3-Terminal Positive Voltage Regulator (+9V))

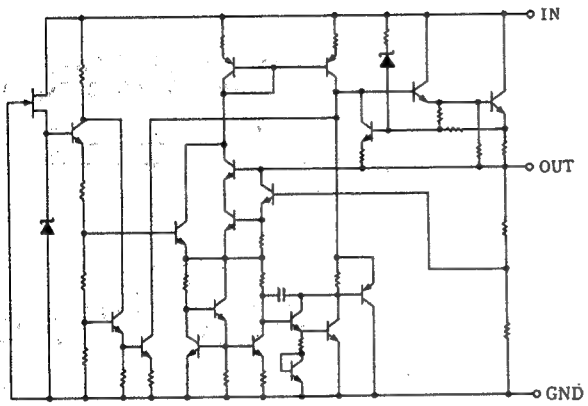


NJM7800A

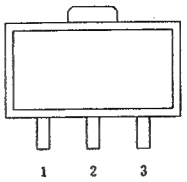
1. OUT
2. GND
3. IN



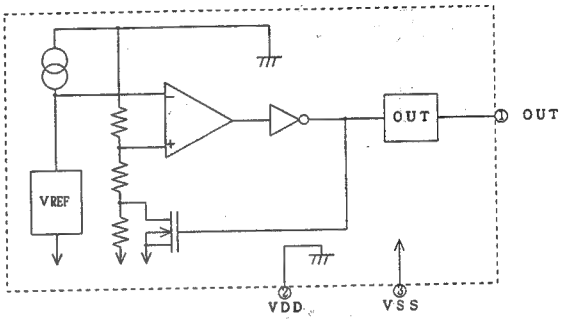
NJM7800FA



■ S-8054HNCB 【SEIKO INSTRUMENTS】
(C-MOS Voltage Detector)

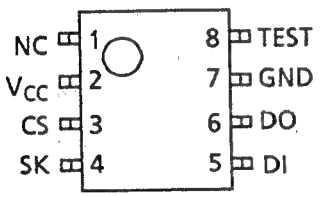


1. OUT
2. VDD
3. VSS

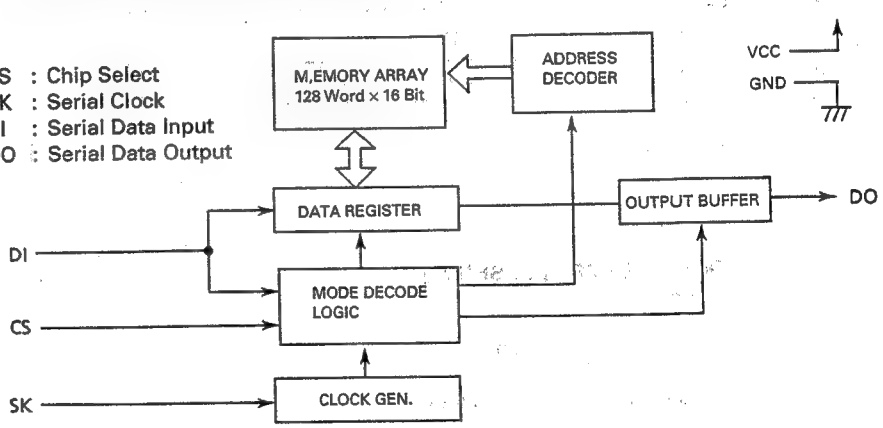


■ S-2924AIF10 【SEIKO INSTRUMENTS】
(CMOS 2K-bit Serial EE PROM)

Top view

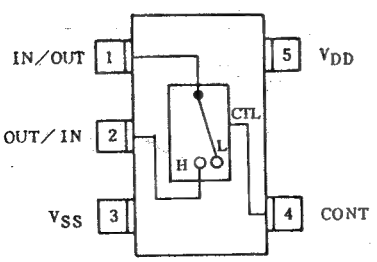


CS : Chip Select
SK : Serial Clock
DI : Serial Data Input
DO : Serial Data Output



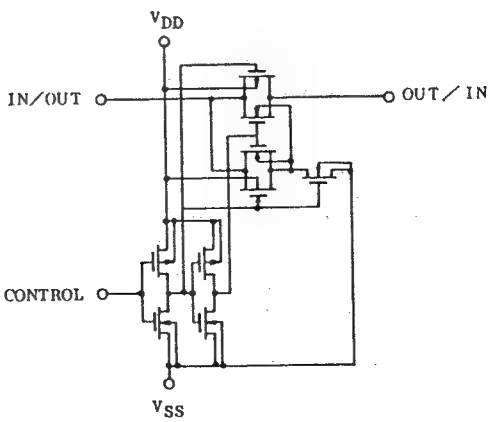
■ TC4S66F 【TOSHIBA】
(Bilateral Switch)

(TOP VIEW)

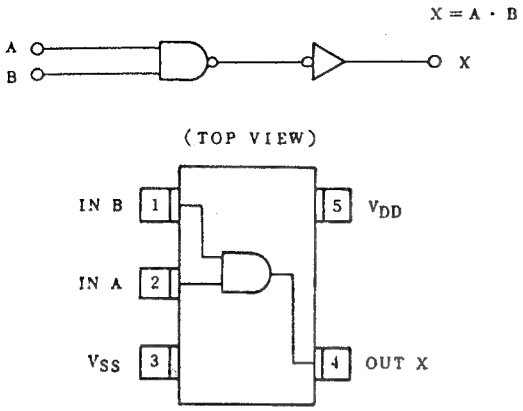


CONTROL	IMPEDANCE BETWEEN IN/OUT-OUT/IN ※
H	$0.5 \sim 5 \times 10^2\ \Omega$
L	$> 10^9\ \Omega$

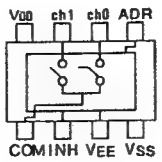
※ See Electrical Characteristics



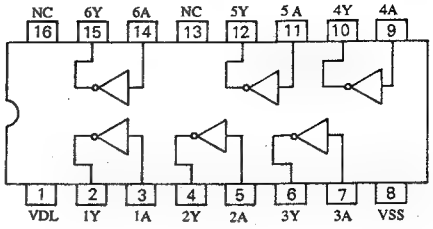
■ TC4S81F 【TOSHIBA】
(2-Input AND Gate)



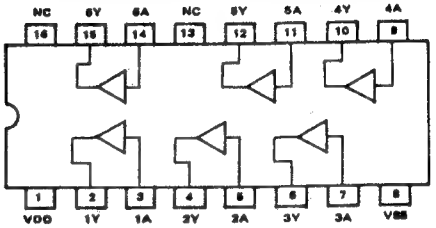
■ TC4W53F 【TOSHIBA】
(Multiplexer)



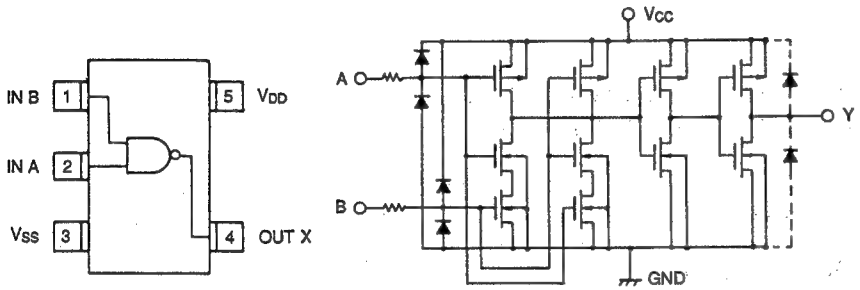
■ TC50H000F 【TOSHIBA】
(Hex Buffer (TC4049 Type))



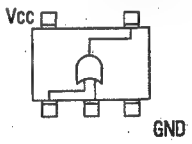
■ TC50H001F 【TOSHIBA】
(Hex Buffer (TC4050 Type))



■ TC7S00F 【TOSHIBA】
(2-Input NAND Gate)

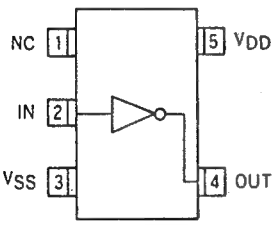


■ TC7S32F 【TOSHIBA】
(2 Input Single OR Gate)

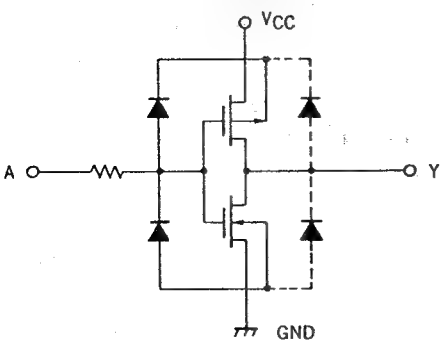


■ TC7SU04F 【TOSHIBA】
(Invertor)

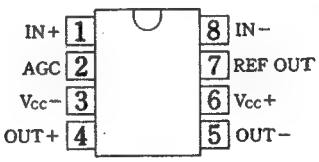
Pin arangement



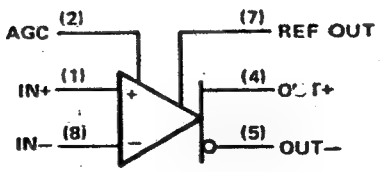
Block diagram



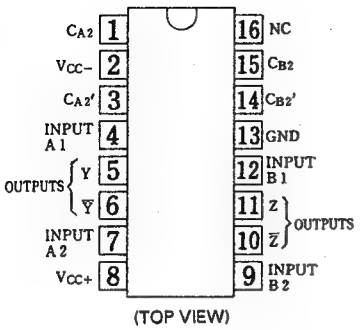
■ TL026CPS 【TEXAS】
(AGC Video Amp)

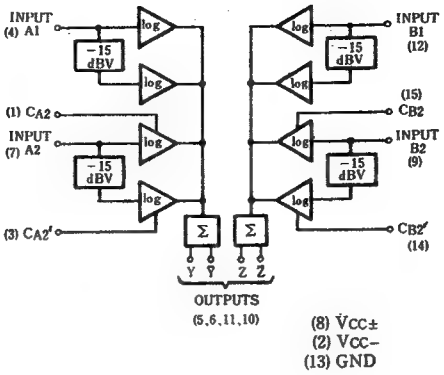


(TOP VIEW)

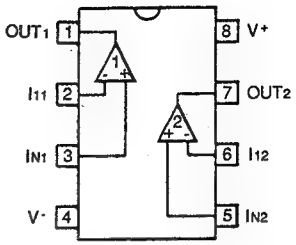


■ TL441CNS 【TEXAS】
(Log Amp)

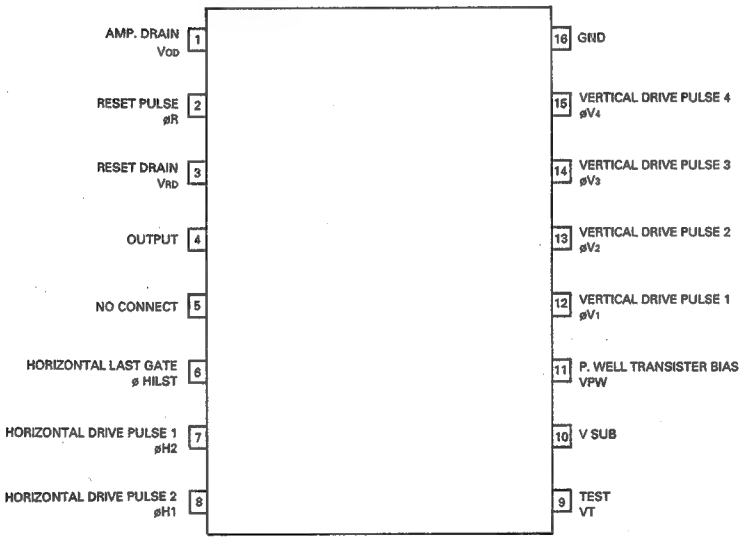




■ UPC812G2 【NEC】
(Op.Amp.)



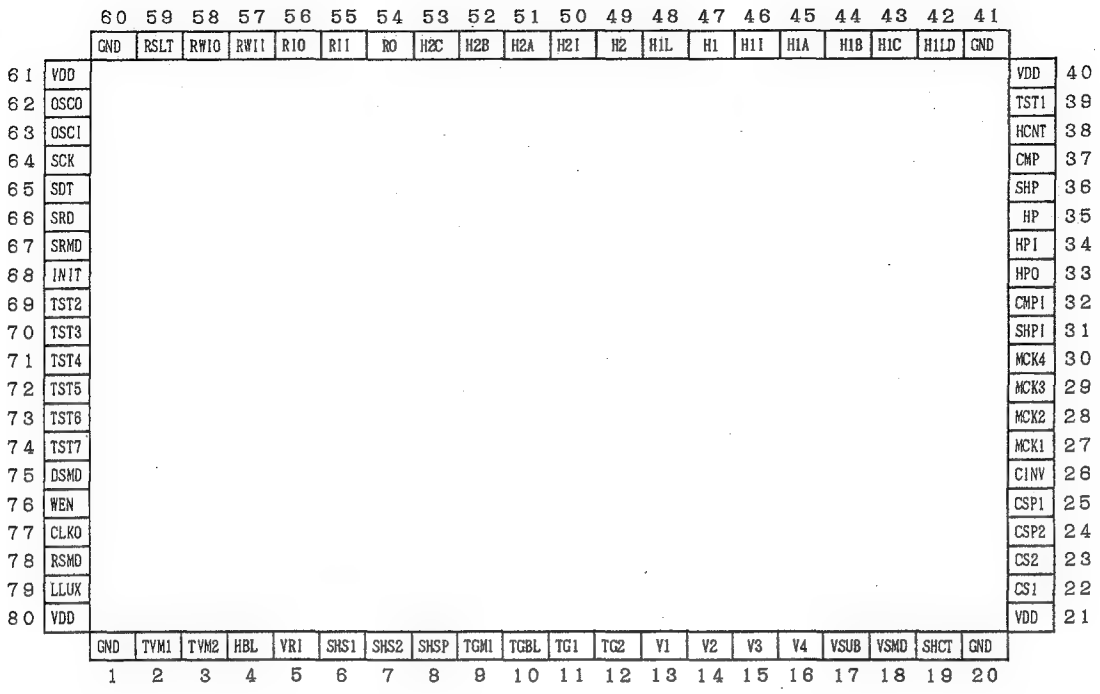
■ UPD3600D-30 【NEC】
(1/3 Inch Interline-Transfer CCD Imagesensor)



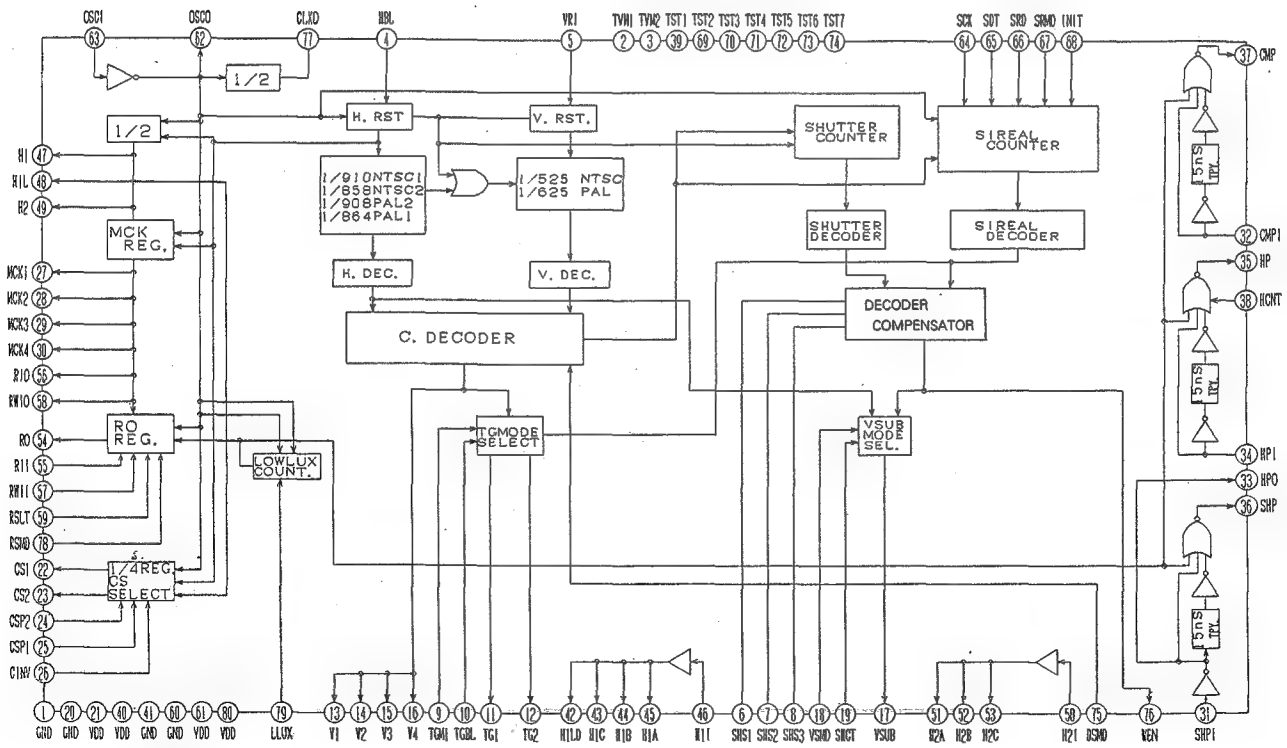
■ UPD3605D-30 【NEC】
(See UPD3600D-30.)

Item		Abbr.	Min.	Tipcal	Max.	Unit
Amp Drain		VOD	14.5	15.0	15.5	V
Reset Drain Voltage		VRD	14.5	15.0	15.5	V
P. Well Transister Bias Voltage		VPW	−10	VL øV −10	VL øV −0.7	V
VSUB		V SUB	3.0	ADJUSTMENT	14.5	V
	SHUTTER	△ VSUB	25.5	26.5	27.5	V
VD Pulse High Level Voltage		VH ø V1, 3	−0.1	0	0.1	V
VD Pulse High Level Voltage		VH ø V2, 4	1.8	2.0	2.2	V
VD Pulse Low Level Voltage		VL øV	−9.0	−8.5	−8.3	V
Phot Diode Gate Voltage		VPDG	14.5	15.0	15.5	V
Test		VT	14.5	15.0	15.5	V
HD Pulse High Level Voltage		VH øH	4.75	5.0	5.5	V
HD Pulse Low Level Voltage		VL øH	−0.05	0	0.05	V
Reset Pulse High Level Voltage		VH øR	12.8	13.0	13.2	V
Reset Pulse Low Level Voltage		VL øR	5.8	6.0	6.2	V

■ UPD9438GK 【NEC】
(Timming Pulse Generator)



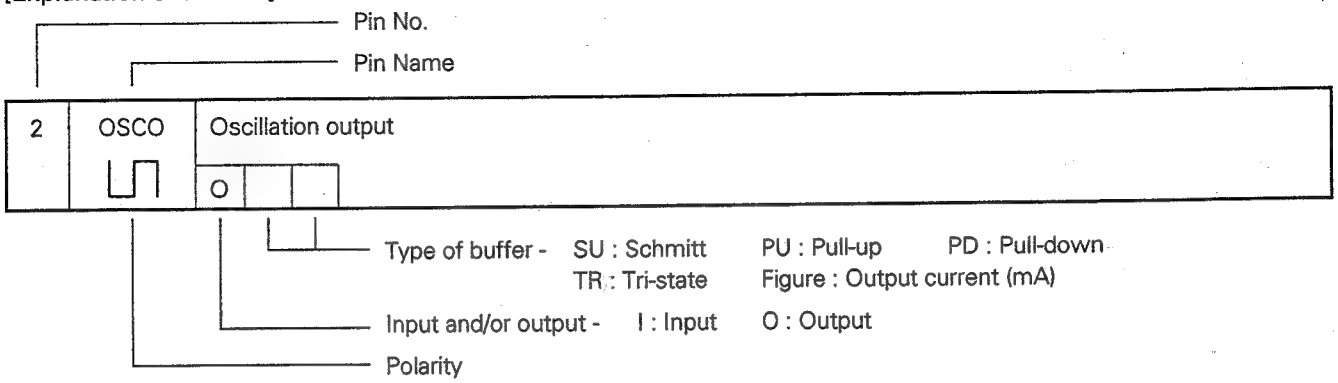
(TOP VIEW)



(BLOCK DIAGRAM)

● Pin function (UPD9438GK)

[Explanation of column]



No.	Symbol	Description
1	GND	Grounding
2	TVM1	TV mode 1 I PD
3	TVM2	TV mode 2 I PD

	NTSC 1 1820 FH	NTSC 2 1716 FH	PAL 2 1816 FH	PAL 1 1728 FH
TVM1	L	H	L	H
TVM2	L	L	H	H

No.	Symbol	Description
4	HBL	H. blanking input (øHBLK) I SH PU • Horizontal sync signal input terminal to be connected with øHBLK of sync signal generator. The breaking (fall point) is detected.
5	VRI	Ext. V. sync input I SH PU • Vertical sync signal input terminal to be connected with VSYNC of sync signal generator. The breaking (fall point) is detected.
6	SHS1	Shutter speed 1 I PD
7	SHS2	Shutter speed 2 I PD
8	SHSP	Shutter speed setting I PD

SHS2	SHS1	SHSP = L	FIELD SHSP = H	FRAME SHSP = H
L	L	1/60	1/60	1/30
L	H	1/100	1/30	1/15
H	L	1/2000	1/7.5	1/3.75
H	H	1/10000	1/3.75	1/1.875

Note: "FRAME" expresses storage time based on TG2 as the reference.

No.	Symbol	Description
9	TGM1	Storage mode I PD • Input terminal for storage mode setting L : Field, H : Frame
10	TGBL	Transfer gate blanking I PD • Slow shutter speed input for multi-speed shutter • Becomes active as blanking pulse at the rise of pulse.
11	TG1	Transfer gate pulse 1 O 9 • Transfer gate drive pulse to transfer signal from photodiode to the vertical register (V1).
12	TG2	Transfer gate pulse 2 O 9 • Transfer gate drive pulse to transfer signal from photodiode to the vertical register (V3).

No.	Symbol	Description
13	V1 	V. transfer pulse 1 O 9 • Vertical transfer register drive pulse
14	V2 	V. transfer pulse 2 O 9 • Vertical transfer register drive pulse
15	V3 	V. transfer pulse 3 O 9 • Vertical transfer register drive pulse
16	V4 	V. transfer pulse 4 O 9 • Vertical transfer register drive pulse
17	VSUB —	Board shutter pulse O 13 • Board shutter pulse to operate VOD shutter
18	VSMD —	Polarity switching of board shutter pulse I PD • Switches polarity of board shutter pulse L : Negative H : Positive
19	SHCT 	Shutter control I SH PD • Terminal to control shutter speed of multi-speed shutter. • When this terminal is used, set the serial shutter to 1/10000. • High level stops VSUB (No. 17) output.
20	GND	Grounding
21	VDD	+5 V power supply
22	CS1 	Color sampling pulse 1 O 9 • Sampling pulse output for color separation sample holding
23	CS2 	Color sampling pulse 2 O 9
24	CSP2 —	Color sampling pulse phase setting 2 I PD • Phases of CS1 and CS2 are settable by this pulse together with CSP1.
25	CSP1 —	Color sampling pulse phase setting 1 I PD • Phases of CS1 and CS2 are settable by this pulse together with CSP1.
26	CINV 	Color separation carrier inversion I PU • Input terminal to switch phases of color separation pulses CS1 (No. 22) and CS2 (No. 23)
27	MCK1 	Main clock 1 O 9 • Main clock fck output terminal. • Output signal having the same phase as H1 (No. 47).
28	MCK2 	Main clock 2 O 9 • Main clock fck output terminal. • Output signal whose phase is 90° delayed from H1 (No. 47).

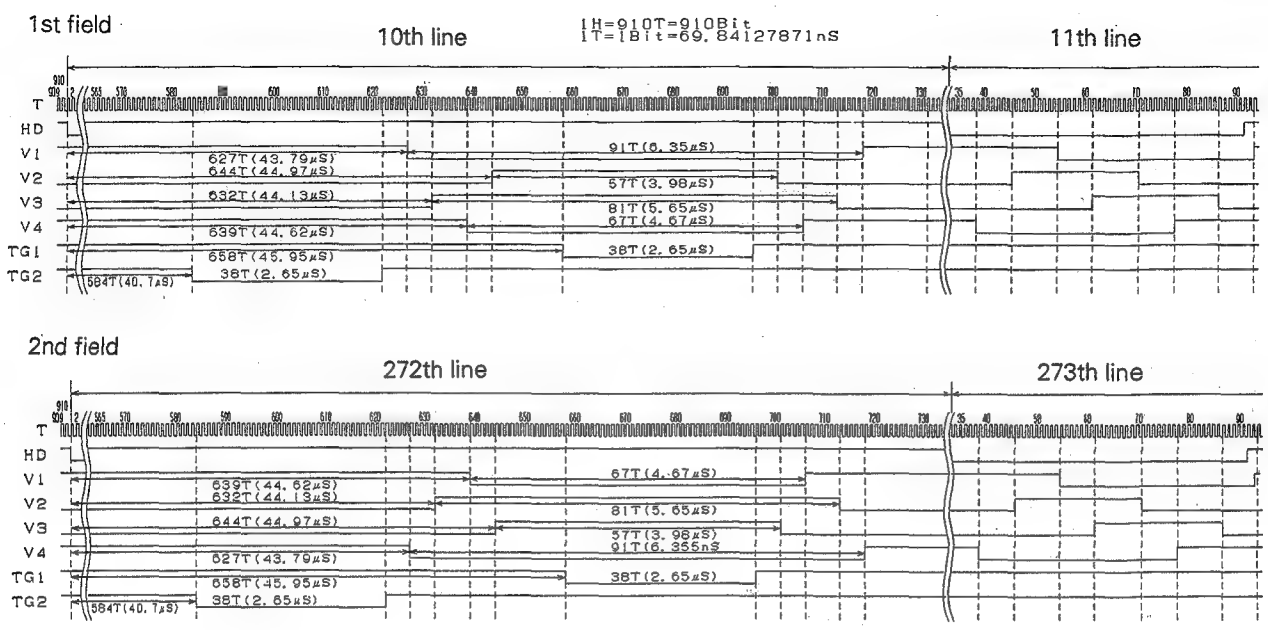
CSP2	CSP1	CS1	CS2
L	L	MCK1	MCK1
L	H	MCK2	MCK2
H	L	MCK3	MCK3
H	H	MCK4	MCK4

No.	Symbol	Description
29	MCK3 	Main clock 3 O | 9 | • Main clock fck output terminal. • Output signal whose phase is 180° delayed from H1 (No. 47).
30	MCK4 	Main clock 4 O | 9 | • Main clock fck output terminal. • Output signal whose phase is 270° delayed from H1 (No. 47).
31	SHP1 	Sample holding pulse input I | SH | • Input terminal to receive SHP (No. 36) output signal. • Input signal is equivalent to main clock.
32	CMPI 	Clamp pulse input I | SH | • Input terminal to receive SHP (No. 36) output signal. • Input signal is equivalent to main clock.
33	HPO 	Half pitch output O | 9 | • Output signal approx. 20 ns behind of SHP (No. 36) output. • To be connected with HP1 (No. 34) through capacitor and resistor.
34	HPI 	Half pitch input I | SH | • Input terminal for fine adjustment of HP (No. 35) output. • To be connected with HPO (No. 33) through capacitor and resistor.
35	HP 	Half pitch output O | 9 | • Signal output at the midterm between CMP (No. 37) and SHP (No. 36) outputs.
36	SHP 	Sample holding pulse output O | 9 | • To sample video signal.
37	CMP 	Clamp pulse O | 9 | • To clamp video siganl.
38	HCNT —	Half pitch control I | SH | PD | • To fix HP (No. 35) pulse at High level. L : Normal mode output H : High level fixing output
39	TST1 —	Test pin 1 I | PD | • Should be open in general.
40	VDD	+5 V power supply
41	GND	Grounding
42	H1LD 	H. final gate transfer pulse for 3-CCD O | 9 | • Horizontal drive pulse output that has High level in horizontal blanking period
43	H1C 	H. transfer pulse for 3-CCD O | 13 | • Horizontal drive pulse output that has High level in horizontal blanking period
44	H1B 	H. transfer pulse for 3-CCD O | 13 | • Horizontal drive pulse output that has High level in horizontal blanking period
45	H1A 	H. transfer pulse for 3-CCD O | 13 | • Horizontal drive pulse output that has High level in horizontal blanking period

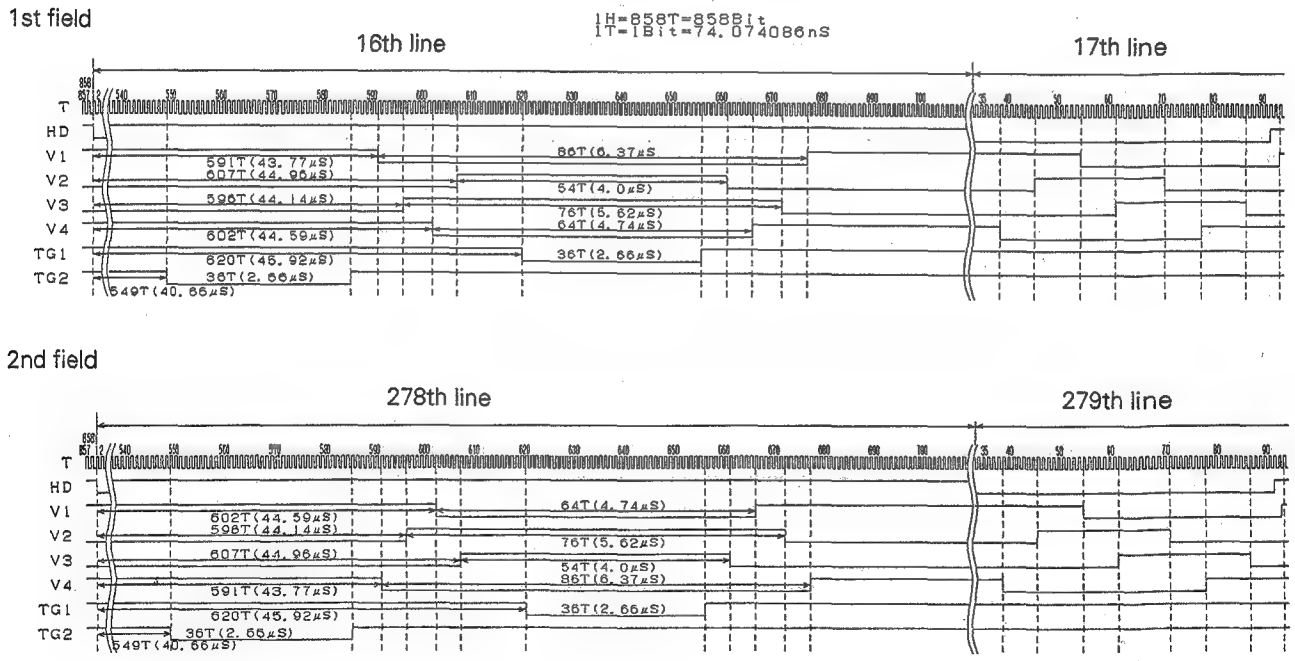
No.	Symbol	Description
46	H1I 	H. transfer pulse input for 3-CCD I • Input terminal to distribute signal to horizontal transfer pulse terminals for 3-CCD. • Connect with H1 (No. 47) for use of 3-CCD camera.
47	H1 	H. transfer pulse O 13 • Horizontal drive signal output that has High level in horizontal blanking period. • Connect with H1I (No. 46) for use of 3-CCD camera.
48	H1L 	H. final gate transfer pulse O 9 • Horizontal drive signal output that has High level in horizontal blanking period. •
49	H2 	H. transfer pulse O 13 • Horizontal drive signal output that has Low level in horizontal blanking period. • Connect with H2I (No. 50) for use of 3-CCD camera.
50	H2I 	H. transfer pulse input for 3-CCD I • Input terminal to distribute signal to horizontal transfer pulse terminals for 3-CCD. • Connect with H2 (No. 49) for use of 3-CCD camera.
51	H2A 	H. transfer pulse for 3-CCD O 13 • Horizontal drive signal output that has Low level in horizontal blanking period.
52	H2B 	H. transfer pulse for 3-CCD O 13 • Horizontal drive signal output that has Low level in horizontal blanking period.
53	H2C 	H. transfer pulse for 3-CCD O 13 • Horizontal drive signal output that has Low level in horizontal blanking period.
54	RO 	H. output reset O 9 • CCD output reset pulse terminal. • This pulse is added with DC component and supplied to øR terminal of CCD.
55	RII 	H. output reset timing input I PU SH • Input terminal to adjust output timing of RO (No. 54) with external input. • Active when RSLT (No. 59) has High level. To be connected with RIO (No. 56).
56	RIO 	H. output reset timing output O 9 • Output terminal to adjust output timing of RO (No. 54) with external input. • To be connected with RII (No. 55).
57	RWII 	H. output reset pulse width setting input I PU SH • Input terminal to adjust pulse width of RO (No. 54) with external input. • Active when RSLT (No. 59) has High level. To be connected with RWIO (No. 58).
58	RWIO 	H. output reset pulse width setting output O 9 • • Output terminal to adjust pulse width of RO (No. 54) with external input. To be connected with RWII (No. 57).
59	RSLT —	H. output reset switching I PD • Input terminal to switch setting mode of RO (No. 54) output. L : Internal setting H : External setting
60	GND	Grounding
61	VDD	+5 V power supply
62	OSCO 	Oscillator output O • Output terminal of built-in oscillation circuit

No.	Symbol	Description
63	OSCI 	Oscillator input I • Input terminal of built-in oscillator circuit
64	SCK 	Serial clock I • Clock input terminal for serial interface. • Reads in at the pulse rise and inputs 1/4 frequency of original oscillation or lower.
65	SDT —	Serial data I • Data input terminal for serial interface. Input data is positive logic. • Sequential reading to start with LSB.
66	SRD —	Reception enable signal O 9 • Enable signal output terminal for serial interface to inform microprocessor whether it is enabled for data reception or disabled. L : Enabled for data reception H : Disabled for data reception
67	SRMD —	Reception mode switching I PD • L : Reception is possible only in V. blanking period. When reception does not finish in V. blanking period : Ineffective • H : Reception is always possible.
68	INIT —	Serial reset I • L : Disables serial interface from operation, or resets it forcibly (hard resetting). • H : Enables serial interface for original operation.
69	TST2 —	Test pin 2 I PD • Should be open in general.
70	TST3 —	Test pin 3 I PD • Should be open in general.
71	TST4 —	Test pin 4 I PD • Should be open in general.
72	TST5 —	Test pin 5 I PD • Should be open in general.
73	TST6 —	Test pin 6 I PD • Should be open in general.
74	TST7 —	Test pin 7 I PD • Should be open in general.
75	DSMD —	Device mode I PD • V. transfer pulse switching terminal for 1/3-CCD or 2/3-CCD. L : Conforming to 1/3-CCD H : Conforming to 2/3-CCD
76	WEN 	Write enable O 13 • Timing pulse output to write data in external memory at slow shutter speed.
77	CLKO 	Clock output O 13 • Half divided output of oscillation frequency
78	RSMD —	Switching of H. output reset pulse polarity O PD • To switch output polarity of RO (No. 54). L : Positive H : Negative
79	LLUX —	Low lux mode I PD • Low lux setting terminal L : Normal mode H : Low lux mode
80	VDD	+5 V power supply

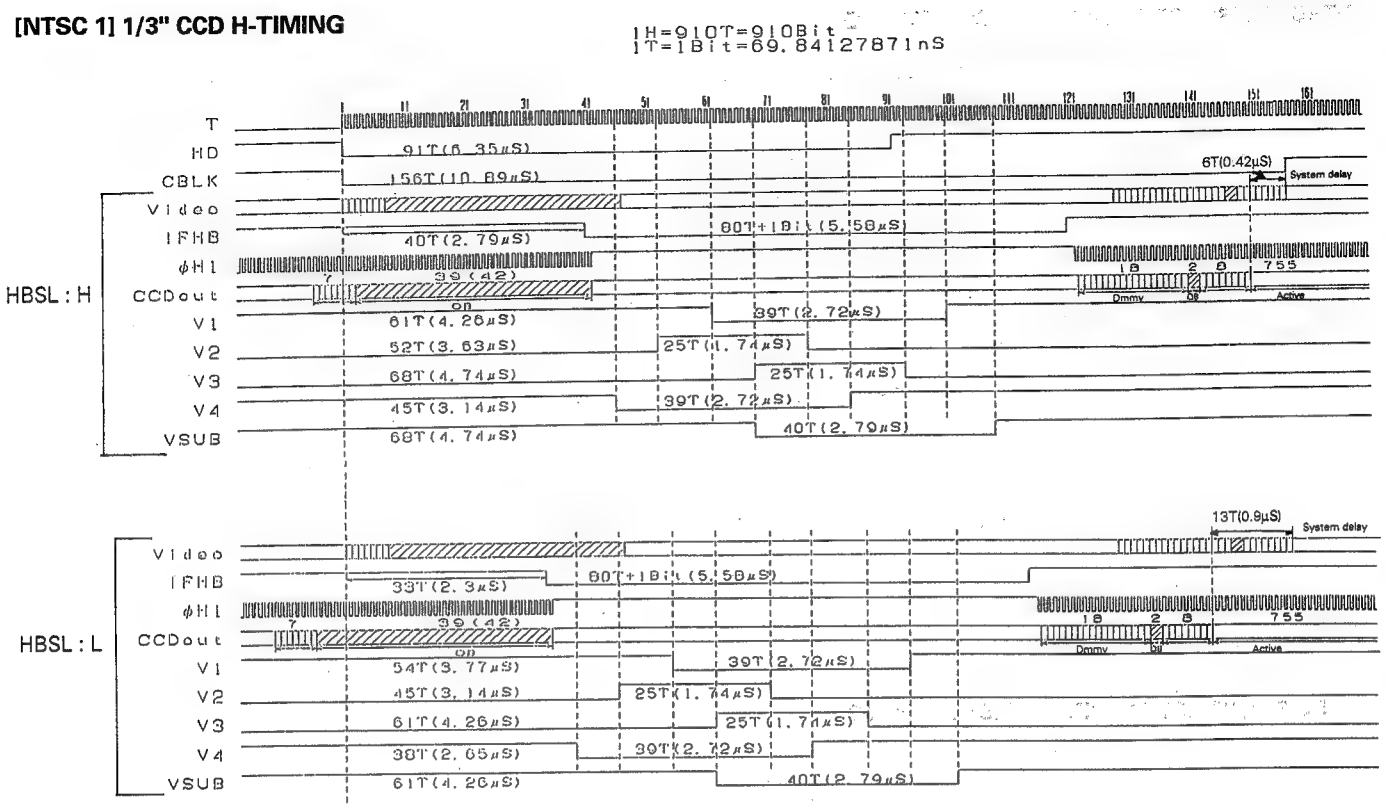
[NTSC 1] 1/3" CCD H-TIMING



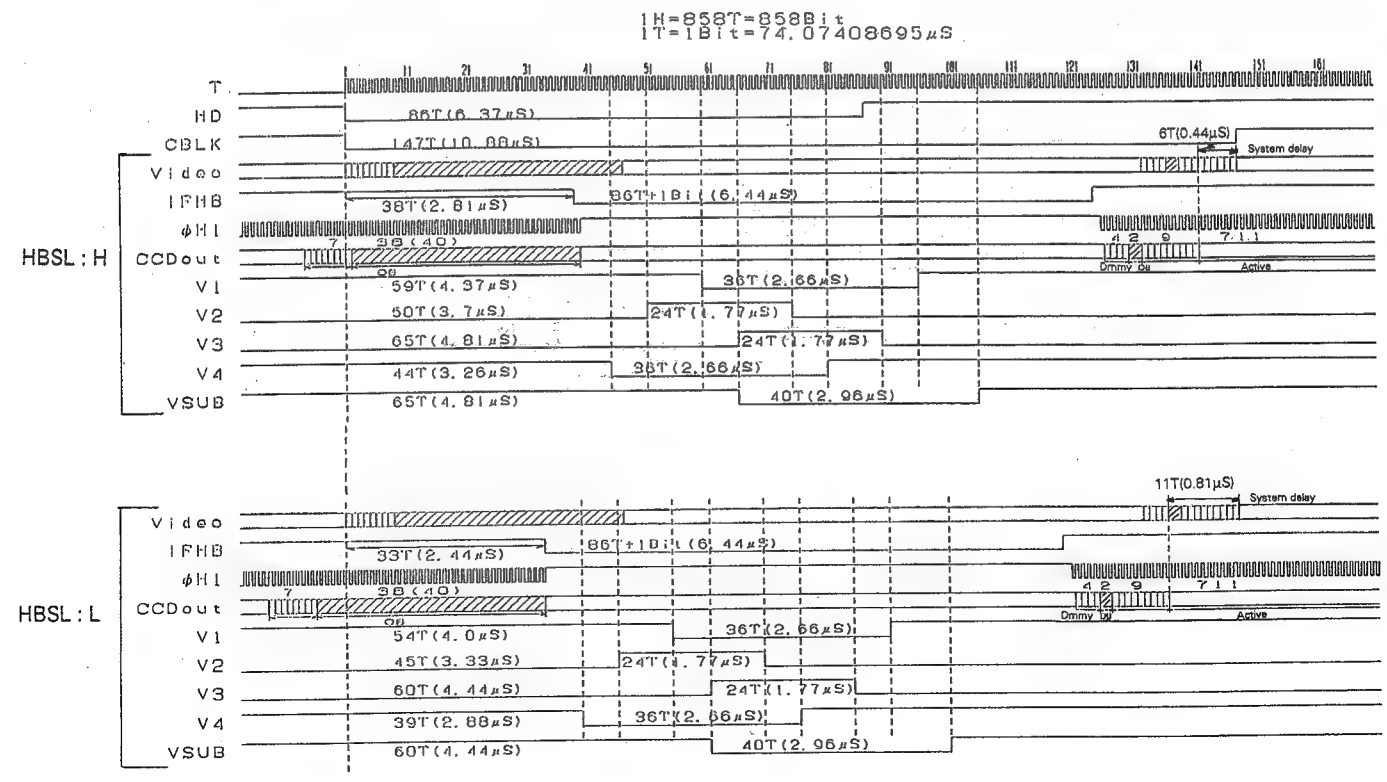
[NTSC 2] 1/3" CCD H-TIMING



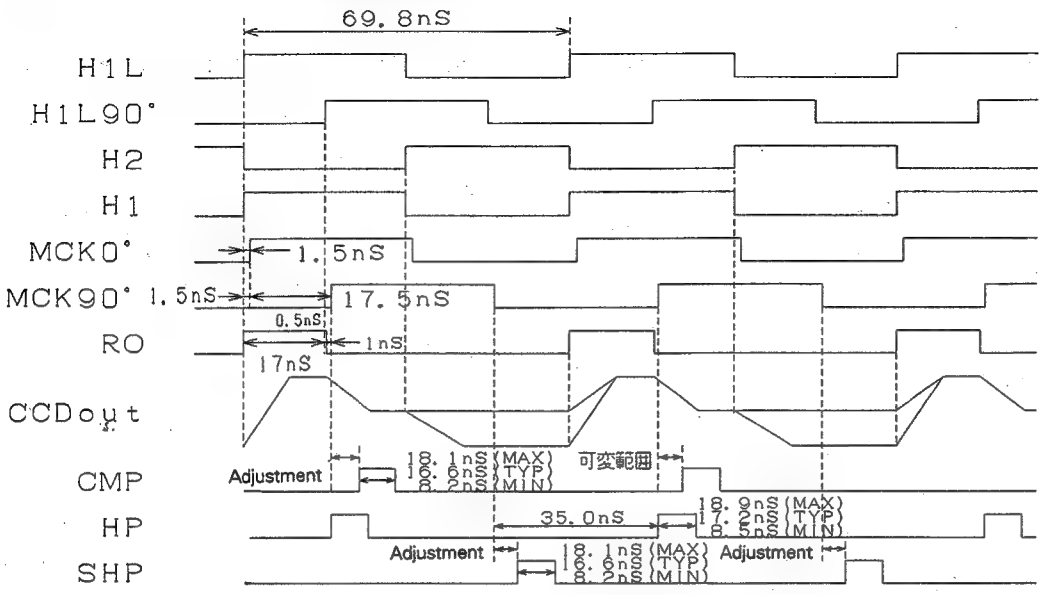
[NTSC 1] 1/3" CCD H-TIMING



[NTSC 2] 1/3" CCD H-TIMING



[NTSC 1] 1/3" CCD DRIVING PULSE H-TIMING



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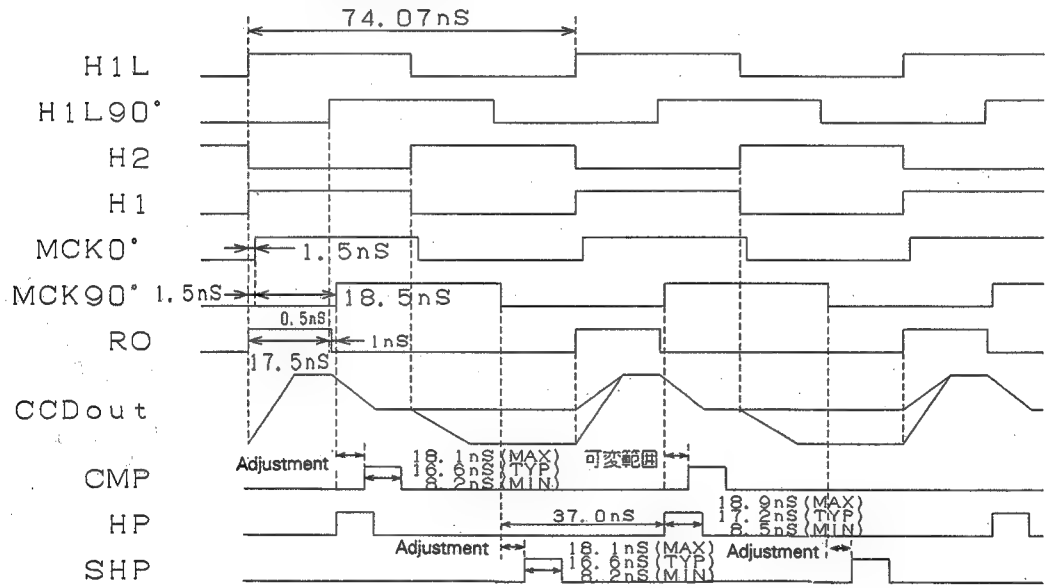
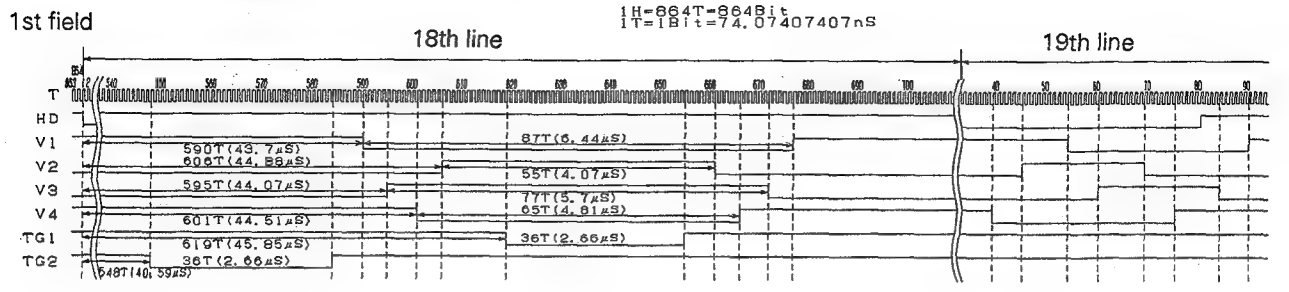
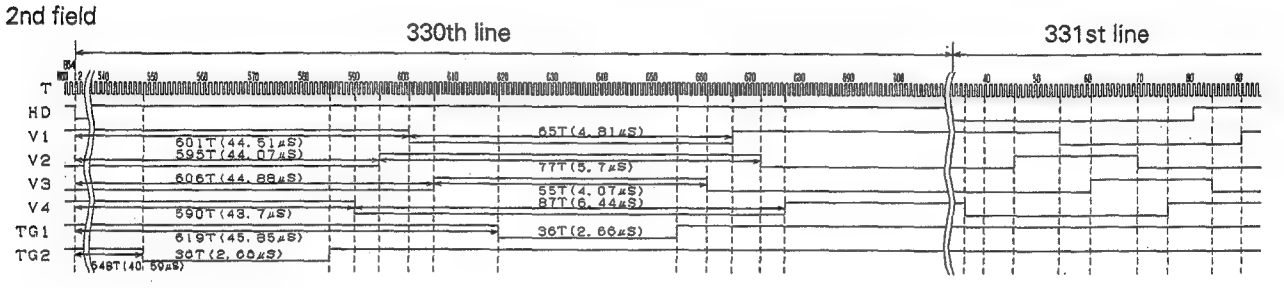


[PAL 1] 1/3" CCD H-TIMING

1st field

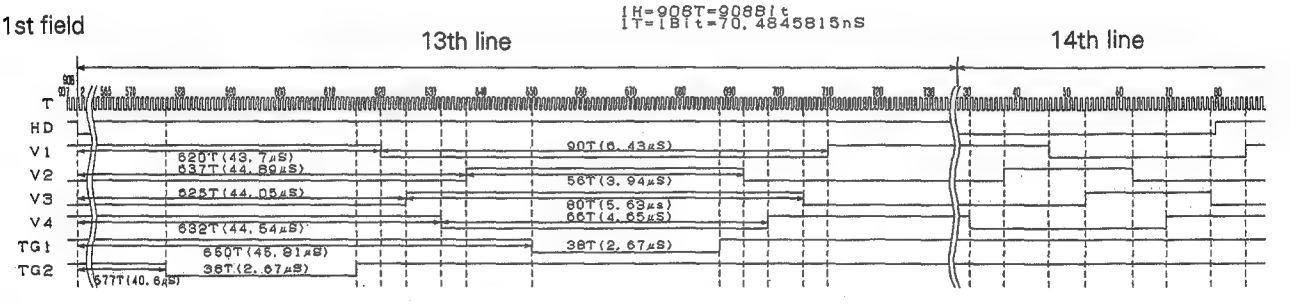


2nd field

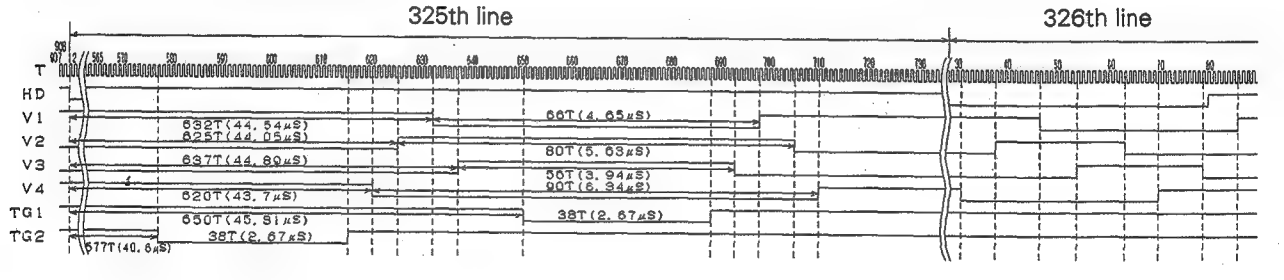


[PAL 2] 1/3" CCD H-TIMING

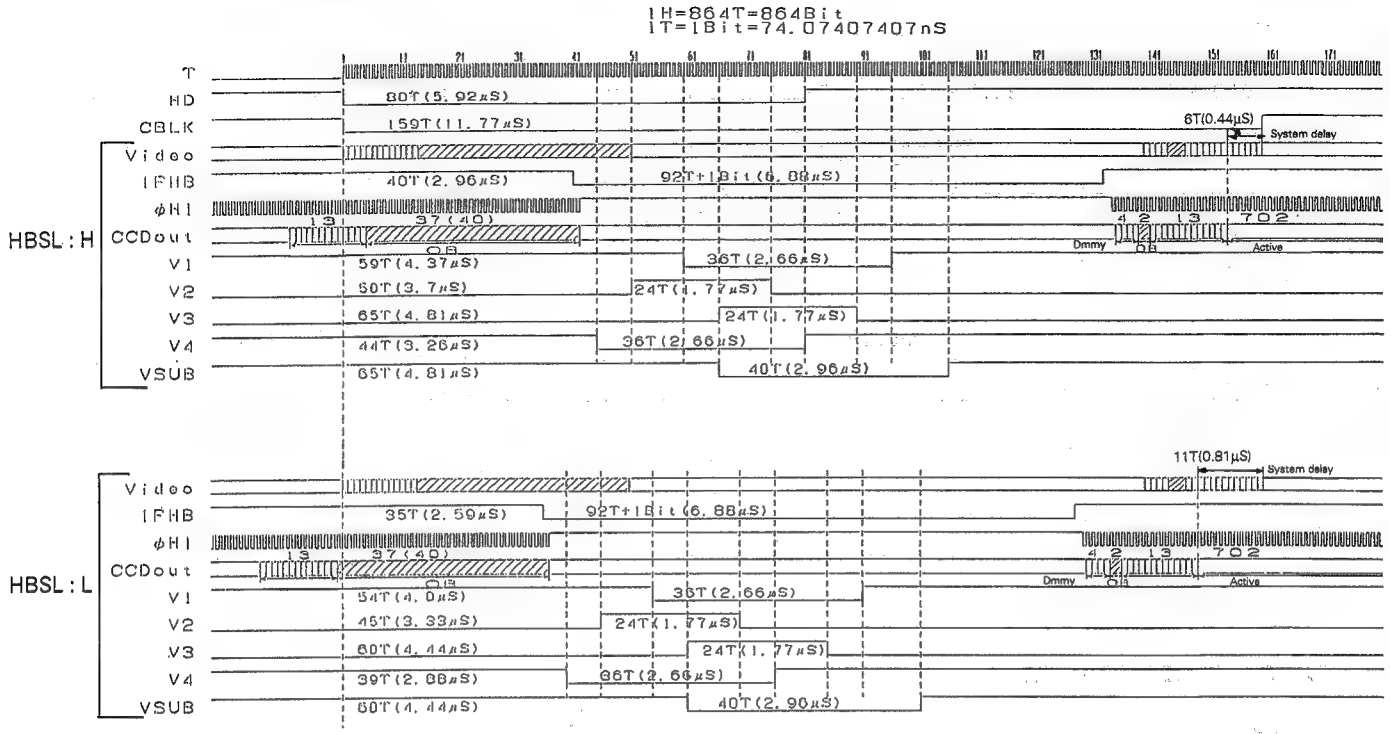
1st field



2nd field



[PAL 1] 1/3" CCD H-TIMING



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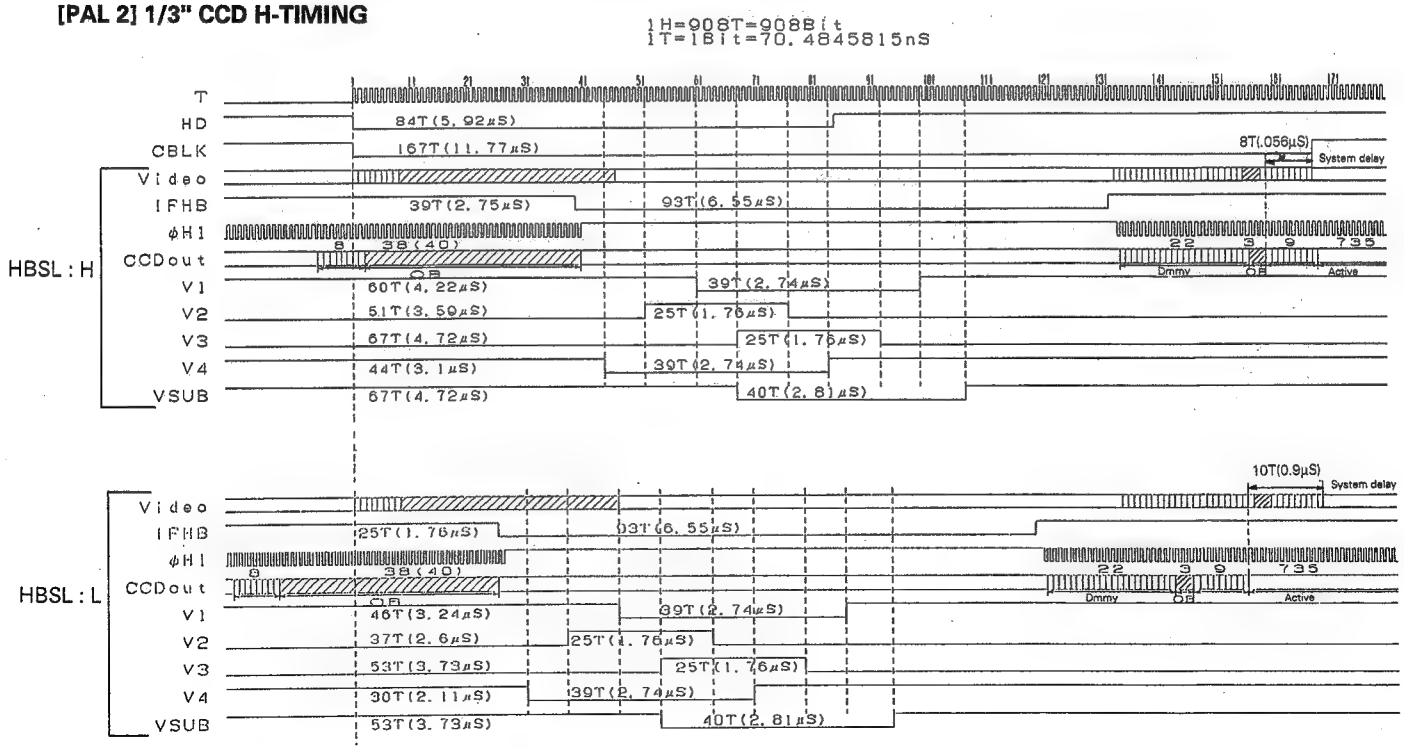
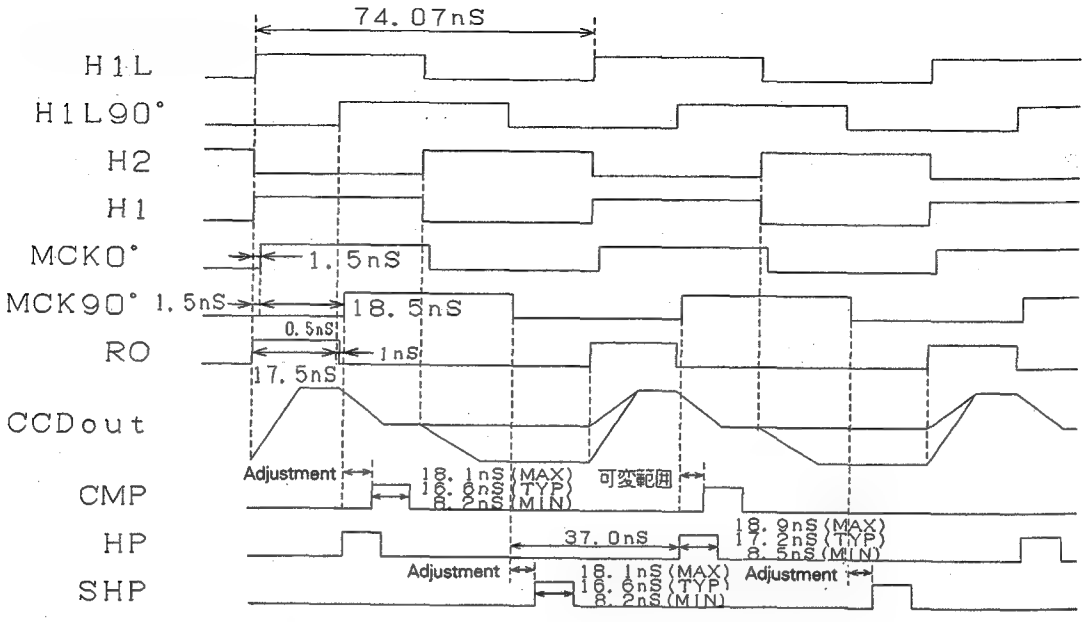
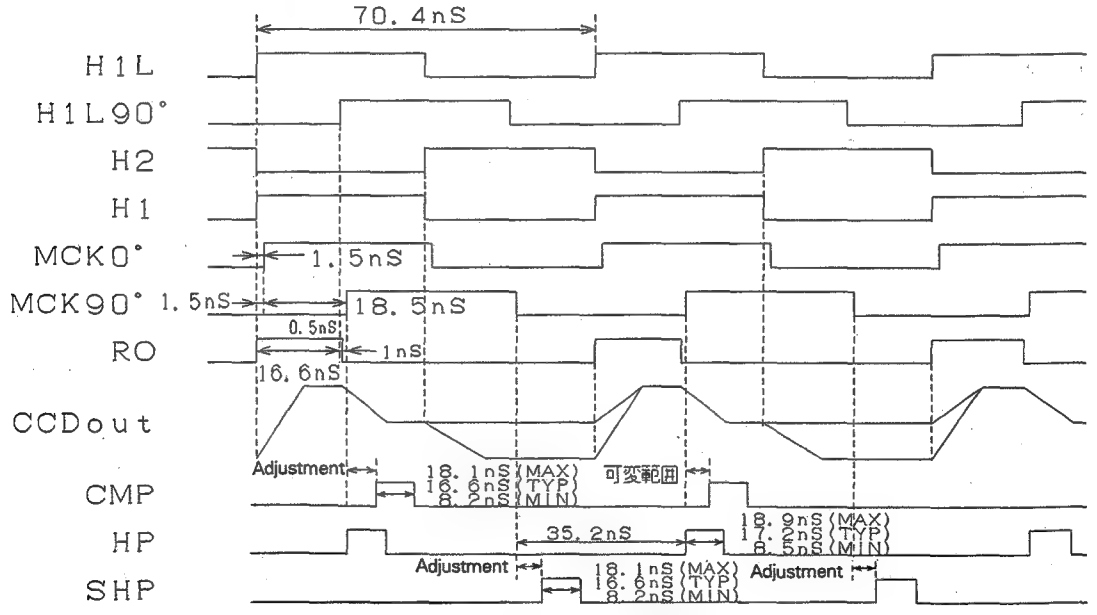


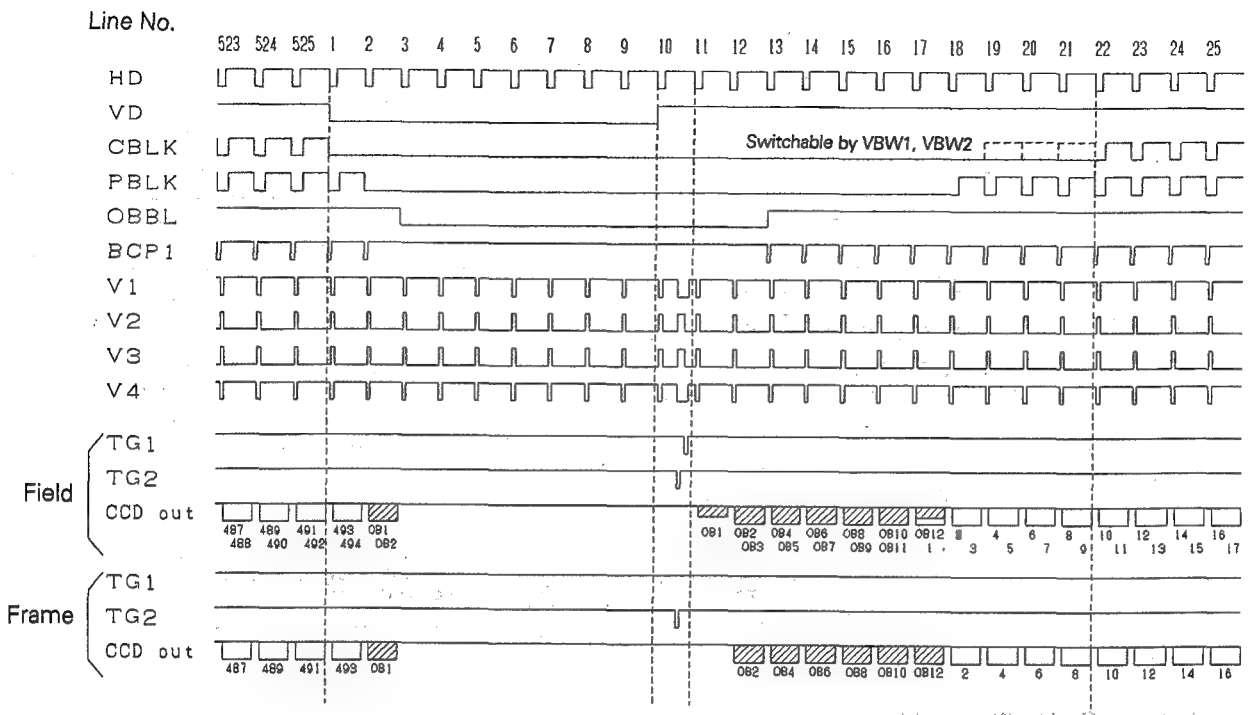
[PAL 1] 1/3" CCD DRIVING PULSE H-TIMING



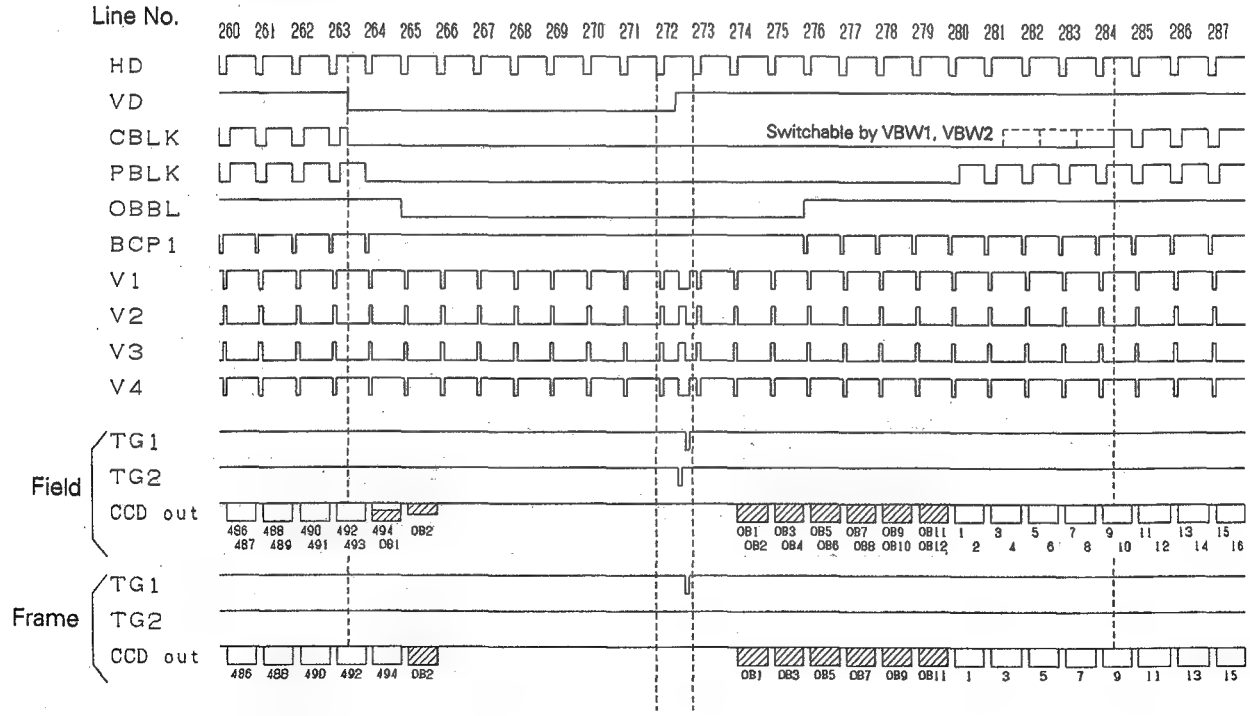
[PAL 2] 1/3" CCD DRIVING PULSE H-TIMING



[NTSC 1] 1/3" CCD V-TIMING (1st field)



[NTSC 1] 1/3" CCD V-TIMING (2nd field)



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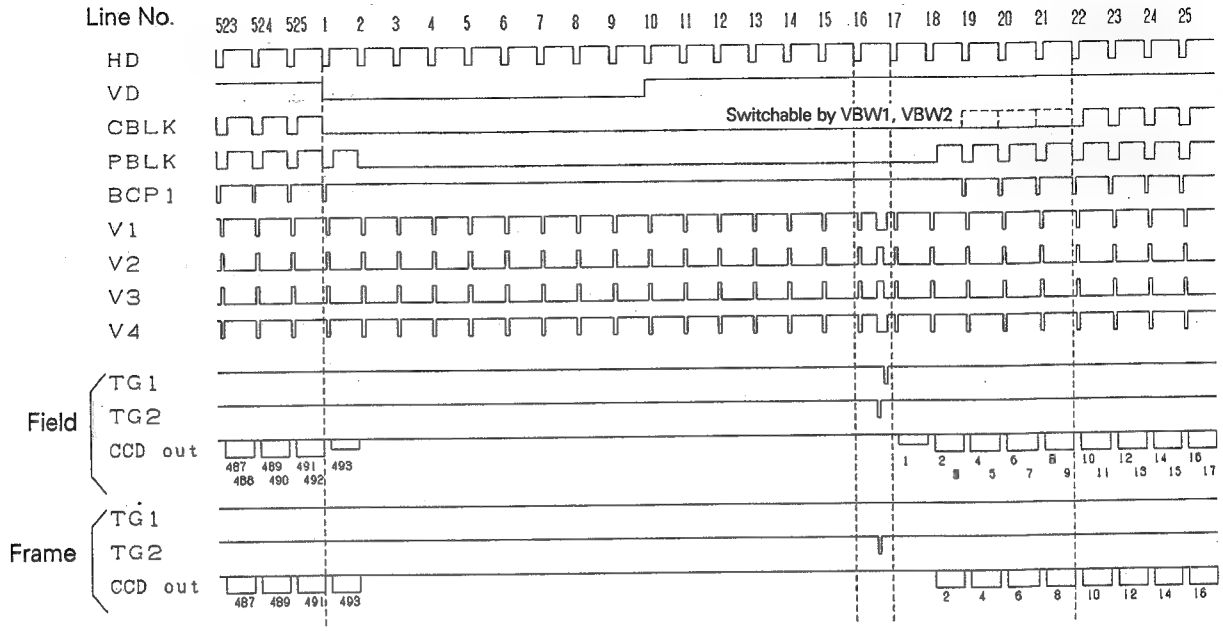
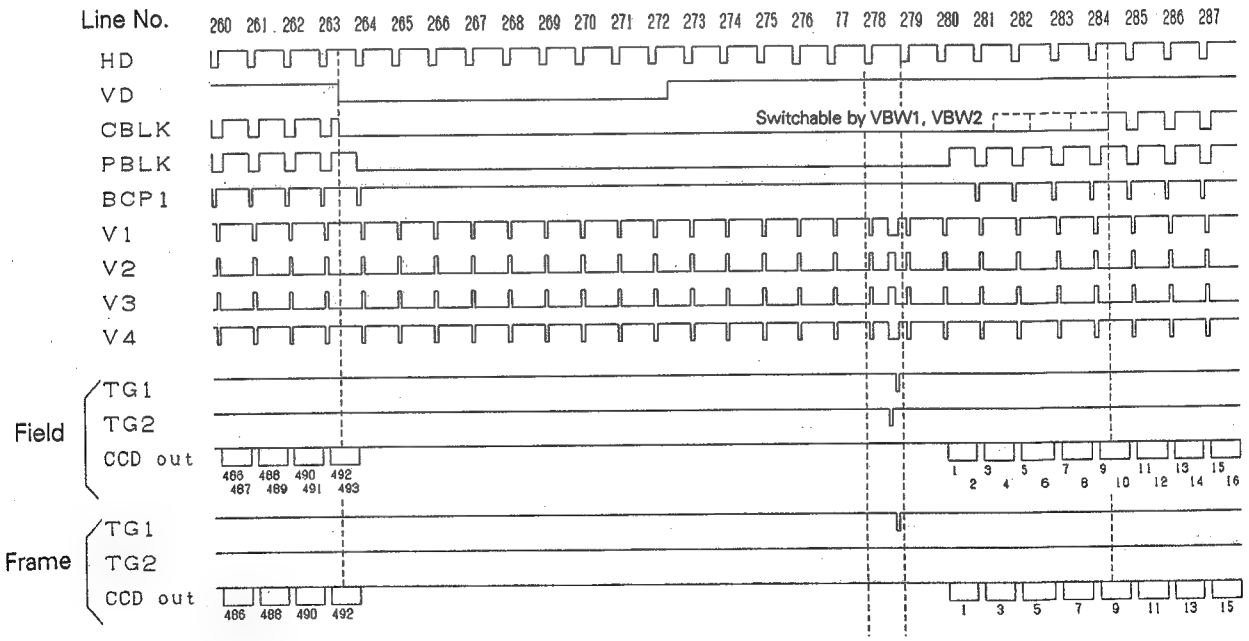
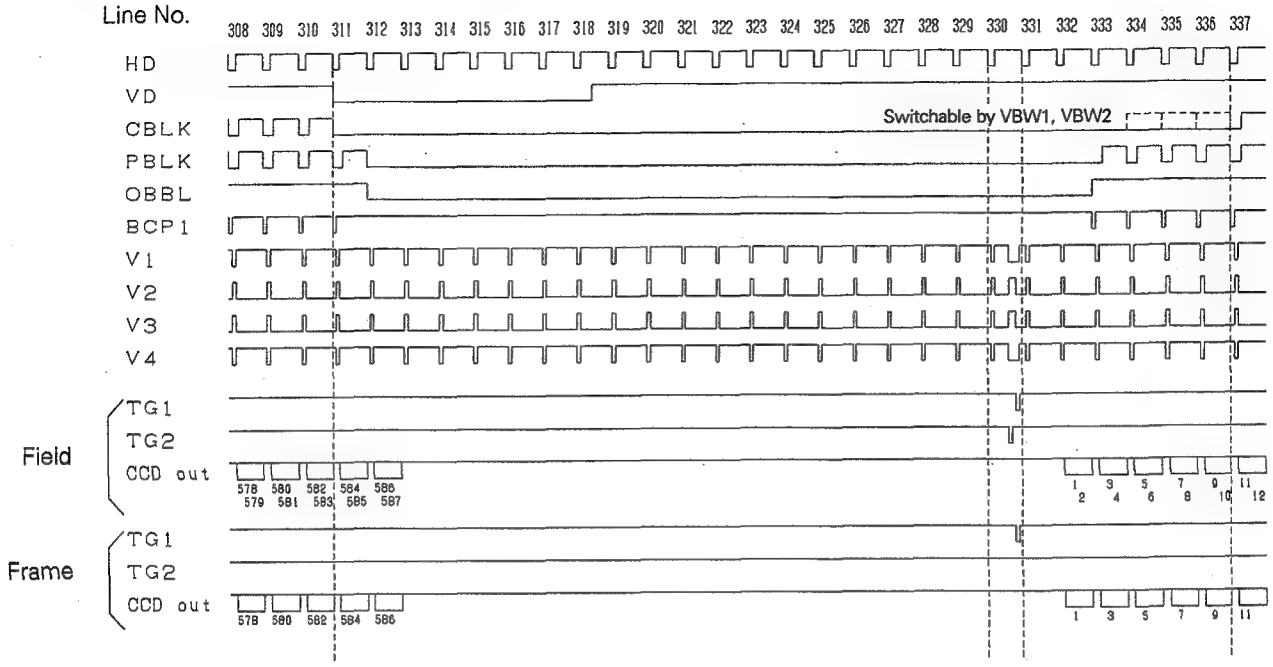


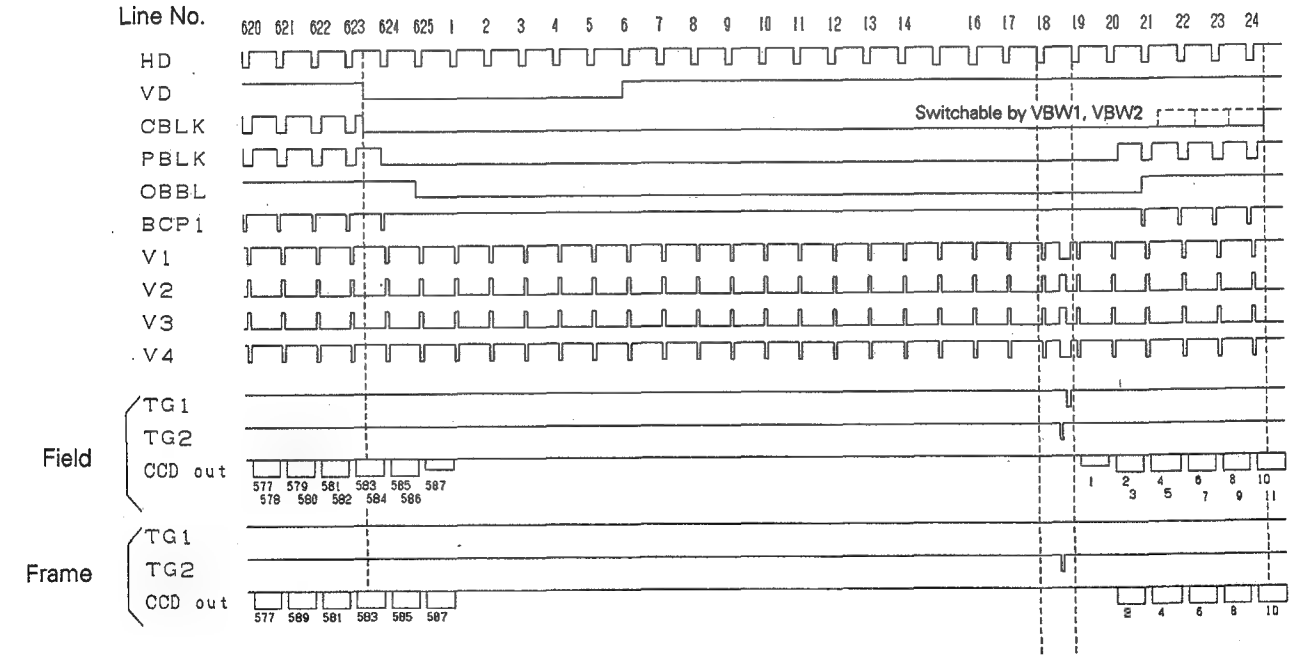
[NTSC 2] 1/3" CCD V-TIMING (2nd field)



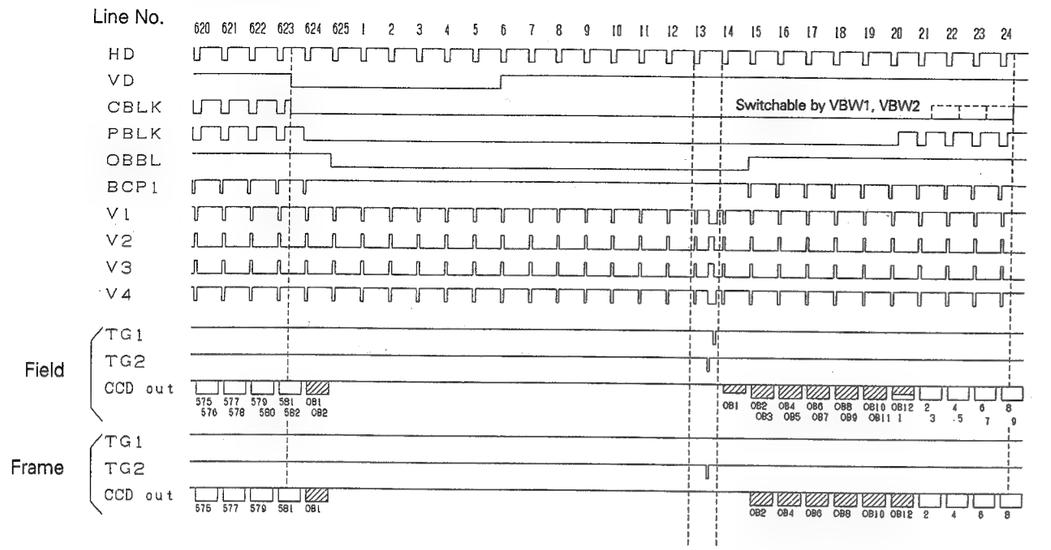
[PAL 1] 1/3" CCD V-TIMING (2nd field)



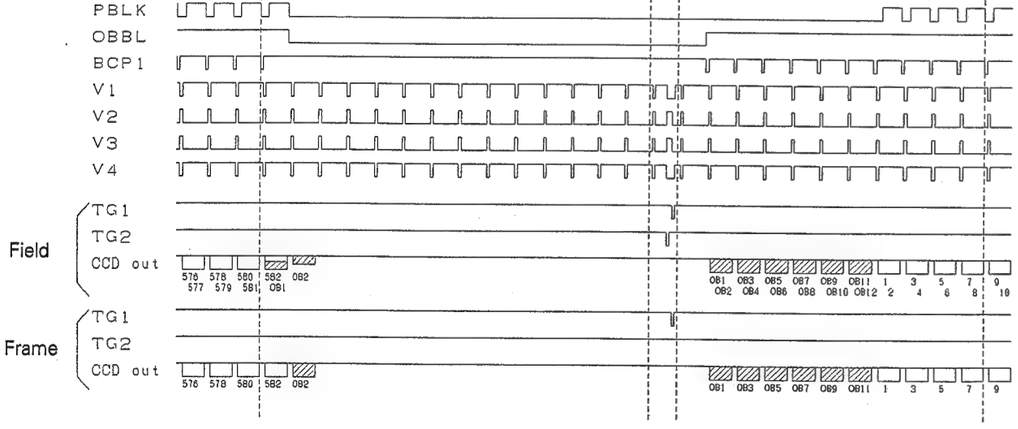
[PAL 1] 1/3" CCD V-TIMING (1st field)



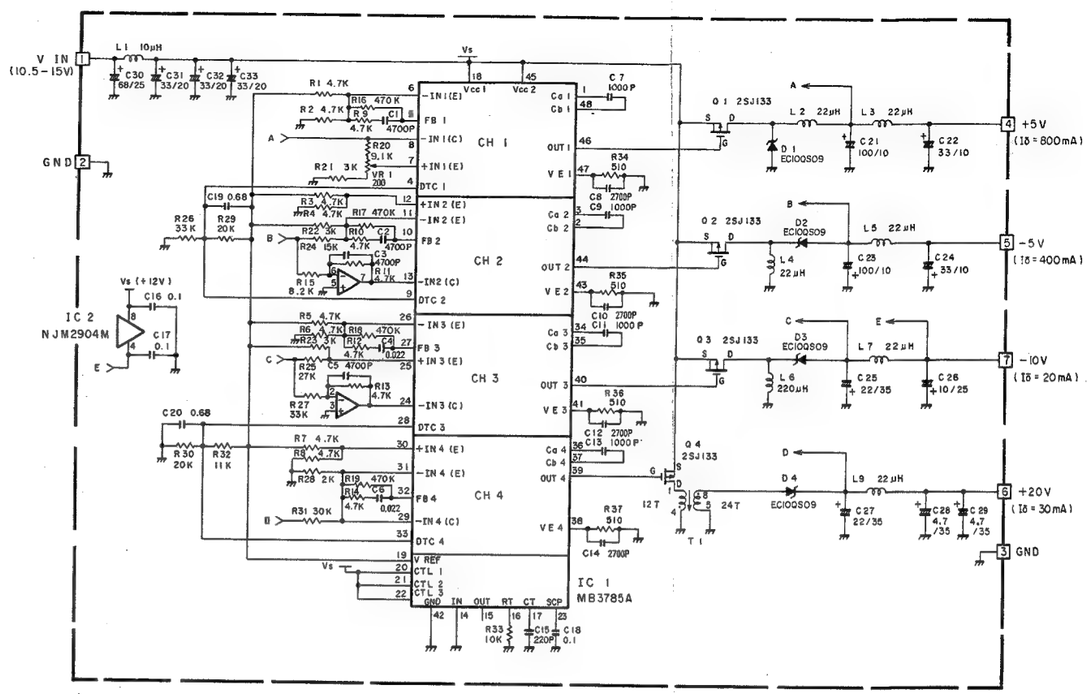
[PAL 2] 1/3" CCD V-TIMING (1st field)



[PAL 2] 1/3" CCD V-TIMING (2nd field)



■ SCV2354-001 (DC/DC Convertor Ass'y)



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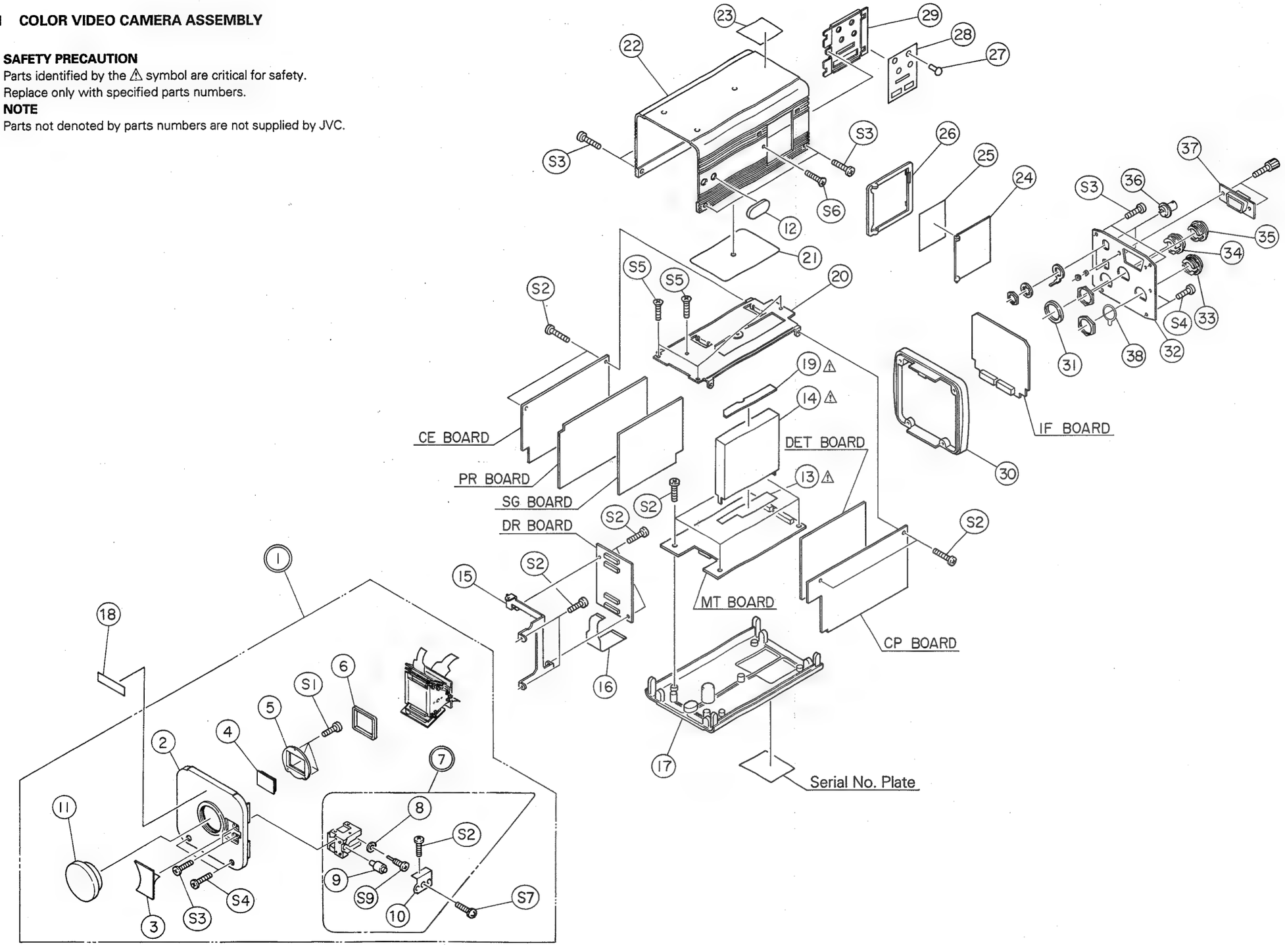
SECTION 4
EXPLODED VIEW AND PARTS LIST

4.1 COLOR VIDEO CAMERA ASSEMBLY

- **SAFETY PRECAUTION**
  Parts identified by the ⚠ symbol are critical for safety.
  Replace only with specified parts numbers.
- **NOTE**
  Parts not denoted by parts numbers are not supplied by JVC.



4.2 KY-F55 ASSEMBLY PARTS LIST M1

M1MM

Symbol No.	Part No.	Part Name	Description
1	SCM0809-N0A	OPTICAL ASS'Y	U Version
1	SCM0809-P0A	OPTICAL ASS'Y	E Version
2	SC20546-001	FRONT FRAME	
3	SC45522-001	FRONT PLATE	
4	SC45530-001	QUARTZ FILTER	U Version
4	SC45530-011	QUARTZ FILTER	E Version
5	SC31784-001	QUARTZ HOLDER	
6	SC45529-001	PRISM RUBBER	
7	SCM0808-00A	OP.GUIDE ASS'Y	
8	WLS2600N	WASHER	
9	SC45485-001	ADJUST PIN	
10	SC45488-001	OPTICAL PLATE	
11	CM45867-001	DUST COVER	
12	SC45568-001	CAP	
⚠ 13	SC45601-001	SHEET	
⚠ 14	SCV2354-001	DC/DC CONVERTOR	
15	SC45523-001	DR BRACKET	
16	SCV2353-003	FPC	
17	SC10172-001	BOTTOM FRAME	
18	SC45550-011	SEAL	
⚠ 19	SC45531-001	SHEET	
20	SC31828-001	UPPER BRACKET	
21	SC45569-002	VR.LOCATION LABEL	
22	SC20548-011	COVER	
23	SC45622-001	CAUTION LABEL	U Version
24	SC31781-001	SWITCH COVER	
25	SC45570-002	SW.NAME LABEL	U Version
25	SC45570-012	SW.NAME LABEL	E Version
26	SC31780-001	SWITCH BASE	
27	SC43451-001	LED LENS	
28	SC45551-001	SWITCH PLATE	
29	SC45552-001	SWITCH BRACKET	
30	SC20547-001	REAR FRAME	
31	SC45586-001	NUT	
32	SC31779-002	REAR COVER	
33	QMDB108-001	CONNECTOR	DC IN
34	SCV2375-S06	CONNECTOR	REMOTE
35	SCV2375-S18	CONNECTOR	LENS
36	CEMB006-00A	CONNECTOR	
37	SCV2373-B09	CONNECTOR	U Version
37	SCV2373-A09	CONNECTOR	E Version
38	SC44370-001	LUG	
S1	SPSK2030M	SCREW	M2×3.0
S2	SPSK2040M	SCREW	M2×4.0
S3	SPSK2660N	SCREW	M2.6×6.0
S4	SPSP2610N	SCREW	M2.6×10
S5	SSSK2040M	SCREW	M2×4.0
S6	SSSP2004N	SCREW	M2×4
S7	LPSP2610Z	SCREW	M2.6×10
S9	SC45486-001	SCREW	

SECTION 5
ELECTRICAL PARTS LIST

SAFETY PRECAUTION:
Parts identified by the ⚠ symbol are critical for safety. Replace only with specified parts numbers.
For maximum reliability and performance, all other replacement parts should be identical to those specified.

NOTE:
- Parts not denoted by parts numbers are not supplied by JVC.
- Abbreviations in this list are as follows:

RESISTORS

In the "Description" column:
All resistance values are in ohms (Ω).
K expresses kilo-ohm (1 000 ohms, kΩ).
M expresses mega-ohm (10^6 ohms, MΩ).

In the "Parts Name" column:

COMP. RESISTOR	:	Composition Resistor
U.F. RESISTOR	:	Non-inflammable Resistor
O.M.F. RESISTOR	:	Oxide Metalized Film Resistor
FUSI. RESISTOR	:	Fusible Resistor
M.P. RESISTOR	:	Metal Plate Resistor
M.G. RESISTOR	:	Metal Graze Resistor
M.F. RESISTOR	:	Metal Film Resistor
W.W. RESISTOR	:	Wire Wound Resistor

CAPACITORS

In the "Description" column:
All capacitance values are in microfarad (μF) unless otherwise indicated.
P expresses picofarad (10^{-12} farad, pF).

In the "Parts Name" column:

TRIM. CAPACITOR	:	Trimmer Capacitor
CER. CAPACITOR	:	Ceramic Capacitor
E. CAPACITOR	:	Electrolytic Capacitor
TAN. CAPACITOR	:	Tantalum Capacitor
MPP CAPACITOR	:	Metalized Polypropylene Capacitor
O.F. CAPACITOR	:	Oil Film Capacitor
MPF CAPACITOR	:	Metalized Polyfilm Capacitor
F.M. CAPACITOR	:	Film Mica Capacitor
P.P. CAPACITOR	:	Polypropylene Capacitor
P.S. CAPACITOR	:	Polystyrene Capacitor

Note: In the "Description" column of the parts list, (U) means the parts for the U version while (E) is for the E Version.

Symbol No.	Part No.	Part Name	Description		
IC1	SCV1585-064	I.C.(M)	JVC	(U)	← for U version
	SCV1585-067	I.C.(M)	JVC	(E)	← for E version

5.1 DR board assembly list [0][1]

〈SCK2380-01-N0A〉

〈SCK2380-01-P0A〉 [0][1][ ][ ][ ][ ][ ][ ]

Symbol No.	Part No.	Part Name	Description	
IC1	UPD9438GK	I.C.(M)	NEC	
IC2	NJM78L15UA	I.C.(M)	JRC	
IC3	MN3110SA	I.C.(M)	MATSUSHITA	
IC4	MN3110SA	I.C.(M)	MATSUSHITA	
IC5	MN3110SA	I.C.(M)	MATSUSHITA	
Q1	2SB1219(QR)	TRANSISTOR	MATSUSHITA	
Q2	2SD1820(QR)	TRANSISTOR	MATSUSHITA	
Q3	2SD1820(QR)	TRANSISTOR	MATSUSHITA	
Q4	2SA1462Y3Y4	TRANSISTOR	NEC	
Q5	2SC3735(45)	TRANSISTOR	NEC	
Q6	2SD1820(QR)	TRANSISTOR	MATSUSHITA	
Q7	2SD1820(QR)	TRANSISTOR	MATSUSHITA	
Q8	2SD1820(QR)	TRANSISTOR	MATSUSHITA	
D1	MA143A	DIODE	MATSUSHITA	
D2	MA142A	DIODE	MATSUSHITA	
D3	MA142A	DIODE	MATSUSHITA	
D4	MA142A	DIODE	MATSUSHITA	
D5	HZM18NB2	ZENNER DIODE	HITACHI	
D6	MA142A	DIODE	MATSUSHITA	
D8	MA142A	DIODE	MATSUSHITA	
D9	MA142A	DIODE	MATSUSHITA	
D10	MA142A	DIODE	MATSUSHITA	
R1	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R2	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R3	NRVA63D-103	M.F.RESISTOR	10K	16W
R4	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R5	NRVA63D-103	M.F.RESISTOR	10K	16W
R6	NRVA63D-123	M.F.RESISTOR	12K	16W
R7	NRVA63D-103	M.F.RESISTOR	10K	16W
R8	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R9	NRVA63D-183	M.F.RESISTOR	18K	16W
R10	NRVA63D-103	M.F.RESISTOR	10K	16W
R11	NRVA63D-100	M.F.RESISTOR	10	16W
R12	NRVA63D-100	M.F.RESISTOR	10	16W
R13	NRVA63D-682	M.F.RESISTOR	6.8K	16W
R14	NRVA63D-183	M.F.RESISTOR	18K	16W
R15	NRVA63D-104	M.F.RESISTOR	100K	16W
R16	NRVA63D-681	M.F.RESISTOR	680	16W
R17	NRSA63J-0R0	M.G.RESISTOR	0	1/16W
R20	NRVA63D-101	M.F.RESISTOR	100	1/16W
R21	NRVA63D-100	M.F.RESISTOR	10	16W
R22	NRVA63D-100	M.F.RESISTOR	10	16W
R23	NRVA63D-100	M.F.RESISTOR	10	16W
R24	NRSA63J-0R0	M.G.RESISTOR	0	1/16W
R25	NRSA63J-0R0	M.G.RESISTOR	0	1/16W
R26	NRVA63D-100	M.F.RESISTOR	10	16W
R27	NRVA63D-100	M.F.RESISTOR	10	16W
R28	NRVA63D-100	M.F.RESISTOR	10	16W
R29	NRSA63J-4R7	M.G.RESISTOR	4.7	16W
R30	NRVA63D-100	M.F.RESISTOR	10	16W
R31	NRVA63D-100	M.F.RESISTOR	10	16W
R32	NRVA63D-100	M.F.RESISTOR	10	16W
R33	NRVA63D-104	M.F.RESISTOR	100K	16W
R35	NRVA63D-562	M.F.RESISTOR	5.6K	1/16W
R36	NRVA63D-392	M.F.RESISTOR	3.9K	1/16W
R37	NRVA63D-223	M.F.RESISTOR	22K	1/16W

Symbol No.	Part No.	Part Name	Description	
R38	NRSA63J-105	M.G.RESISTOR	1.0M	16W
R39	NRVA63D-562	M.F.RESISTOR	5.6K	1/16W
R40	NRVA63D-392	M.F.RESISTOR	3.9K	1/16W
R41	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R42	NRSA63J-105	M.G.RESISTOR	1.0M	16W
R43	NRVA63D-562	M.F.RESISTOR	5.6K	1/16W
R44	NRVA63D-392	M.F.RESISTOR	3.9K	1/16W
R45	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R49	NRSA63J-105	M.G.RESISTOR	1.0M	16W
R50	NRVA63D-152	M.F.RESISTOR	1.5K	16W
R51	NRVA63D-101	M.F.RESISTOR	100	1/16W
VR1	SVP1312-102	TRIM.RESISTOR	1K	HP
VR2	SVP1312-102	TRIM.RESISTOR	1K	SHP
VR3	SVP1312-102	TRIM.RESISTOR	1K	CP
VR4	SVP1312-203	RTRIM.RESISTOR	20K	G VSUB
VR5	SVP1312-203	RTRIM.RESISTOR	20K	B VSUB
VR6	SVP1312-203	RTRIM.RESISTOR	20K	R VSUB
C1	NEA11CM-226	E.CAPACITOR	22	16V
C2	NEF11CM-105	TAN.CAPACITOR	1.0	16V
C3	NEA11AM-336	E.CAPACITOR	33	10V
C4	NEF11DM-225	TAN.CAPACITOR	2.2	20V
C5	NCB21EK-473	CER.CAPACITOR	0.047	25V
C6	NEF10GM-336	TAN.CAPACITOR	33	4V
C7	NEA11EM-106	E.CAPACITOR	10	25V
C8	NEA11CM-226	E.CAPACITOR	22	16V
C9	NEF11CM-335	TAN.CAPACITOR	3.3	16V
C10	NCB31HK-103	CER.CAPACITOR	0.010	50V
C11	NEF11CM-335	TAN.CAPACITOR	3.3	16V
C12	NCT06CH-220	CER.CAPACITOR	22P	50V
C13	NCT06CH-220	CER.CAPACITOR	22P	50V
C14	NCB21EK-473	CER.CAPACITOR	0.047	25V
C15	NEF11CM-105	TAN.CAPACITOR	1.0	16V
C16	NCB31HK-103	CER.CAPACITOR	0.010	50V
C17	NEF11VM-105	TAN.CAPACITOR	1.0	35V
C18	NCB21EK-473	CER.CAPACITOR	0.047	25V
C23	NCB21EK-473	CER.CAPACITOR	0.047	25V
C24	NCT06CH-100	CER.CAPACITOR	10P	50V
C27	NCB21EK-473	CER.CAPACITOR	0.047	25V
C28	NEF11CM-105	TAN.CAPACITOR	1.0	16V
C29	NCT06CH-101	CER.CAPACITOR	100P	50V
C30	NCB21EK-473	CER.CAPACITOR	0.047	25V
C31	NCB21EK-473	CER.CAPACITOR	0.047	25V
C32	NCB21EK-473	CER.CAPACITOR	0.047	25V
C33	NCB21EK-473	CER.CAPACITOR	0.047	25V
C34	NCB21EK-473	CER.CAPACITOR	0.047	25V
C35	NCB21EK-473	CER.CAPACITOR	0.047	25V
C36	NEF11VM-105	TAN.CAPACITOR	1.0	35V
C37	NCB21EK-473	CER.CAPACITOR	0.047	25V
C38	NCB21EK-473	CER.CAPACITOR	0.047	25V
C39	NEF11EM-475	TAN.CAPACITOR	4.7	25V
C40	NCB21EK-473	CER.CAPACITOR	0.047	25V
C41	NCB21EK-473	CER.CAPACITOR	0.047	25V
C42	NCB21EK-473	CER.CAPACITOR	0.047	25V
C43	NCB21EK-473	CER.CAPACITOR	0.047	25V
C44	NCB21EK-473	CER.CAPACITOR	0.047	25V
C45	NEF11VM-105	TAN.CAPACITOR	1.0	35V
C46	NCB21EK-473	CER.CAPACITOR	0.047	25V

[DR]

Symbol No.	Part No.	Part Name	Description	
C47	NCB21EK-473	CER.CAPACITOR	0.047	25V
C48	NEF11EM-475	TAN.CAPACITOR	4.7	25V
C49	NCB21EK-473	CER.CAPACITOR	0.047	25V
C50	NCB21EK-473	CER.CAPACITOR	0.047	25V
C51	NCB21EK-473	CER.CAPACITOR	0.047	25V
C52	NCB21EK-473	CER.CAPACITOR	0.047	25V
C53	NCB21EK-473	CER.CAPACITOR	0.047	25V
C54	NEF11VM-105	TAN.CAPACITOR	1.0	35V
C55	NCB21EK-473	CER.CAPACITOR	0.047	25V
C56	NCB21EK-473	CER.CAPACITOR	0.047	25V
C57	NEF11EM-475	TAN.CAPACITOR	4.7	25V
C58	NEA10JM-337	E.CAPACITOR	330	6.3V
LC1	SCV1804-222	EMI FILTER		
CN11	SSV1983-020W	CONNECTOR	20-PIN	
CN12	SSV1983-020W	CONNECTOR	20-PIN	
CN13	SSV1983-020W	CONNECTOR	20-PIN	
CN14	SSV1983-020W	CONNECTOR	20-PIN	

5.2 ISB board assembly list [0][2]

〈SCK2380-02-00A〉

[0][2]□□□□□□

Symbol No.	Part No.	Part Name	Description	
IC1	SCV2404-001	IC SOCKET		
IC2	CXA1439M	I.C.(M)	SONY	
Q1	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
Q3	2SA1622(M6)	TRANSISTOR	SANYO	
Q4	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
R1	NRVA63D-332	M.F.RESISTOR	3.3K	1/16W
R2	NRVA63D-101	M.F.RESISTOR	100	16W
R3	NRVA63D-472	M.F.RESISTOR	4.7K	1/16W
R4	NRVA63D-682	M.F.RESISTOR	6.8K	16W
R6	NRVA63D-101	M.F.RESISTOR	100	16W
R7	NRVA63D-472	M.F.RESISTOR	4.7K	16W
R8	NRVA63D-101	M.F.RESISTOR	100	16W
R9	NRVA63D-152	M.F.RESISTOR	1.5K	16W
R10	NRSA63J-105	M.G.RESISTOR	1.0M	16W
C1	NEF11VM-335	TAN.CAPACITOR	3.3	35V
C2	NCB21EK-473	CER.CAPACITOR	0.047	25V
C3	NCB21EK-473	CER.CAPACITOR	0.047	25V
C5	NCB21EK-473	CER.CAPACITOR	0.047	25V
C6	NCB21EK-473	CER.CAPACITOR	0.047	25V
C7	NCB21EK-473	CER.CAPACITOR	0.047	25V
C8	NCB21EK-473	CER.CAPACITOR	0.047	25V
CN12	SCV2374-018	CONNECTOR	18-PIN	
TP1	SCV1880-001	TEST POINT		

5.3 ISG board assembly list [0][3]

〈SCK2380-03-00A〉 [0][3]□□□□□□

Symbol No.	Part No.	Part Name	Description	
IC1	SCV2404-001	IC SOCKET		
IC2	CXA1439M	I.C.(M)	SONY	
Q1	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
Q2	3SK157	F.E.T.	NEC	
Q3	2SA1622(M6)	TRANSISTOR	SANYO	
Q4	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
R1	NRVA63D-332	M.F.RESISTOR	3.3K	1/16W
R2	NRVA63D-101	M.F.RESISTOR	100	16W
R3	NRVA63D-472	M.F.RESISTOR	4.7K	1/16W
R4	NRVA63D-682	M.F.RESISTOR	6.8K	16W
R5	NRVA63D-332	M.F.RESISTOR	3.3K	16W
R7	NRVA63D-472	M.F.RESISTOR	4.7K	16W
R8	NRVA63D-101	M.F.RESISTOR	100	16W
R9	NRVA63D-152	M.F.RESISTOR	1.5K	16W
R10	NRSA63J-105	M.G.RESISTOR	1.0M	16W
C1	NEF11VM-335	TAN.CAPACITOR	3.3	35V
C2	NCB21EK-473	CER.CAPACITOR	0.047	25V
C3	NCB21EK-473	CER.CAPACITOR	0.047	25V
C5	NCB21EK-473	CER.CAPACITOR	0.047	25V
C6	NCB21EK-473	CER.CAPACITOR	0.047	25V
C7	NCB21EK-473	CER.CAPACITOR	0.047	25V
C8	NCB21EK-473	CER.CAPACITOR	0.047	25V
C10	NCT06CH-330	CER.CAPACITOR	33P	50V
CN13	SCV2374-018	CONNECTOR	18-PIN	
TP1	SCV1880-001	TEST POINT		

5.4 ISR board assembly list [0][4]

〈SCK2380-04-00A〉 [0][4]□□□□□□

Symbol No.	Part No.	Part Name	Description	
IC1	SCV2404-001	IC SOCKET		
IC2	CXA1439M	I.C.(M)	SONY	
Q1	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
Q3	2SA1622(M6)	TRANSISTOR	SANYO	
Q4	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
R1	NRVA63D-332	M.F.RESISTOR	3.3K	1/16W
R2	NRVA63D-101	M.F.RESISTOR	100	16W
R3	NRVA63D-472	M.F.RESISTOR	4.7K	1/16W
R4	NRVA63D-682	M.F.RESISTOR	6.8K	16W
R6	NRVA63D-101	M.F.RESISTOR	100	16W
R7	NRVA63D-472	M.F.RESISTOR	4.7K	16W
R8	NRVA63D-101	M.F.RESISTOR	100	16W
R9	NRVA63D-152	M.F.RESISTOR	1.5K	16W
R10	NRSA63J-105	M.G.RESISTOR	1.0M	16W
C1	NEF11VM-335	TAN.CAPACITOR	3.3	35V
C2	NCB21EK-473	CER.CAPACITOR	0.047	25V
C3	NCB21EK-473	CER.CAPACITOR	0.047	25V
C5	NCB21EK-473	CER.CAPACITOR	0.047	25V
C6	NCB21EK-473	CER.CAPACITOR	0.047	25V
C7	NCB21EK-473	CER.CAPACITOR	0.047	25V
C8	NCB21EK-473	CER.CAPACITOR	0.047	25V
CN14	SCV2374-018	CONNECTOR	18-PIN	
TP1	SCV1880-001	TEST POINT		

5.5 PR board assembly list [0][5]

〈SCK2378-01-00A〉 [0][5]□□□□□□

Symbol No.	Part No.	Part Name	Description
IC1	AD817AR	I.C.(M)	ANALOG DEVICES
IC2	AD810AR	I.C.(M)	ANALOG DEVICES
IC3	AD817AR	I.C.(M)	ANALOG DEVICES
IC4	TL441CNS	I.C.(M)	TEXAS
IC5	AD817AR	I.C.(M)	ANALOG DEVICES
IC6	AD817AR	I.C.(M)	ANALOG DEVICES
IC7	AD817AR	I.C.(M)	ANALOG DEVICES
IC8	NJM062M	I.C.(M)	JRC
IC9	LMC6082IM	I.C.(M)	NATIONAL SEMICO
IC10	TC4S66F	I.C.(M)	TOSHIBA
IC11	TC4S66F	I.C.(M)	TOSHIBA
IC12	LMC6082IM	I.C.(M)	NATIONAL SEMICO
IC13	TC4S66F	I.C.(M)	TOSHIBA
IC14	MC74HC4053F	I.C.(M)	MOTOROLA
IC15	MC74HC4053F	I.C.(M)	MOTOROLA
IC16	MC74HC4053F	I.C.(M)	MOTOROLA
IC17	MC74HC4053F	I.C.(M)	MOTOROLA
IC101	AD817AR	I.C.(M)	ANALOG DEVICES
IC102	AD810AR	I.C.(M)	ANALOG DEVICES
IC103	AD817AR	I.C.(M)	ANALOG DEVICES
IC104	NJM4556M	I.C.(M)	JRC
IC105	AD817AR	I.C.(M)	ANALOG DEVICES
IC106	AD817AR	I.C.(M)	ANALOG DEVICES
IC107	AD817AR	I.C.(M)	ANALOG DEVICES
IC108	NJM062M	I.C.(M)	JRC
IC109	LMC6082IM	I.C.(M)	NATIONAL SEMICO
IC110	TC4S66F	I.C.(M)	TOSHIBA
IC111	TC4S66F	I.C.(M)	TOSHIBA
IC113	TC4S66F	I.C.(M)	TOSHIBA
IC201	AD817AR	I.C.(M)	ANALOG DEVICES
IC202	AD810AR	I.C.(M)	ANALOG DEVICES
IC203	AD817AR	I.C.(M)	ANALOG DEVICES
IC204	TL441CNS	I.C.(M)	TEXAS
IC205	AD817AR	I.C.(M)	ANALOG DEVICES
IC206	AD817AR	I.C.(M)	ANALOG DEVICES
IC207	AD817AR	I.C.(M)	ANALOG DEVICES
IC208	NJM062M	I.C.(M)	JRC
IC209	LMC6082IM	I.C.(M)	NATIONAL SEMICO
IC210	TC4S66F	I.C.(M)	TOSHIBA
IC211	TC4S66F	I.C.(M)	TOSHIBA
IC212	LMC6082IM	I.C.(M)	NATIONAL SEMICO
IC213	TC4S66F	I.C.(M)	TOSHIBA
IC302	NJM062M	I.C.(M)	JRC
IC303	NJM062M	I.C.(M)	JRC
IC304	NJM2068MD	I.C.(M)	JRC
IC307	TC4W53F	I.C.(M)	TOSHIBA
Q1	2SK662(Q.R)	F.E.T.	MATSUSHITA
Q2	2SJ163(Q.R)	F.E.T.	MATSUSHITA
Q3	2SJ163(Q.R)	F.E.T.	MATSUSHITA
Q4	2SA1532(BC)	TRANSISTOR	MATSUSHITA
Q101	2SK662(QR)	F.E.T.	MATSUSHITA
Q102	2SJ163(Q.R)	F.E.T.	MATSUSHITA
Q103	2SJ163(Q.R)	F.E.T.	MATSUSHITA
Q104	2SA1532(BC)	TRANSISTOR	MATSUSHITA
Q105	2SC3930(BC)	TRANSISTOR	MATSUSHITA
Q201	2SK662(QR)	FET	MATSUSHITA
Q202	2SJ163(Q.R)	F.E.T.	MATSUSHITA
Q203	2SJ163(Q.R)	F.E.T.	MATSUSHITA
Q204	2SA1532(BC)	TRANSISTOR	MATSUSHITA
Q205	2SC3930(BC)	TRANSISTOR	MATSUSHITA
Q301	2SC3930(BC)	TRANSISTOR	MATSUSHITA
D1	MA742	DIODE	MATSUSHITA
D2	MA742	DIODE	MATSUSHITA
D3	MA742	DIODE	MATSUSHITA
R1	NRVA63D-331	M.F.RESISTOR	330 16W
R2	NRVA63D-331	M.F.RESISTOR	330 16W
R3	NRVA63D-331	M.F.RESISTOR	330 16W
R4	NRVA63D-122	M.F.RESISTOR	1.2K 16W
R5	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R6	NRSA63J-105	M.G.RESISTOR	1.0M 1/16W
R8	NRVA63D-223	M.F.RESISTOR	22K 16W
R9	NRVA63D-103	M.F.RESISTOR	10K 16W
R10	NRVA63D-472	M.F.RESISTOR	4.7K 16W
R11	NRVA63D-152	M.F.RESISTOR	1.5K 16W
R12	NRSA63J-105	M.G.RESISTOR	1.0M 1/16W
R13	NRVA63D-102	M.F.RESISTOR	1.0K 16W
R14	NRVA63D-271	M.F.RESISTOR	270 16W
R15	NRSA63J-105	M.G.RESISTOR	1.0M 16W
R16	NRSA63J-561	M.G.RESISTOR	560 1/16W
R17	NRVA63D-102	M.F.RESISTOR	1.0K 16W
R18	NRVA63D-182	M.F.RESISTOR	1.8K 1/16W
R19	NRVA63D-102	M.F.RESISTOR	1.0K 16W
R20	NRVA63D-182	M.F.RESISTOR	1.8K 1/16W
R21	NRSA63J-105	M.G.RESISTOR	1.0M 1/16W
R22	NRVA63D-393	M.F.RESISTOR	39K 1/16W
R23	NRVA63D-102	M.F.RESISTOR	1.0K 16W
R24	NRVA63D-102	M.F.RESISTOR	1.0K 16W
R25	NRVA63D-473	M.F.RESISTOR	47K 16W
R26	NRVA63D-392	M.F.RESISTOR	3.9K 16W
R27	NRVA63D-391	M.F.RESISTOR	390 16W
R28	NRVA63D-681	M.F.RESISTOR	680 16W
R29	NRVA63D-102	M.F.RESISTOR	1.0K 16W
R30	NRVA63D-471	M.F.RESISTOR	470 16W
R34	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R101	NRVA63D-331	M.F.RESISTOR	330 16W
R102	NRVA63D-331	M.F.RESISTOR	330 16W
R103	NRVA63D-331	M.F.RESISTOR	330 16W
R104	NRVA63D-122	M.F.RESISTOR	1.2K 1/16W
R105	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R106	NRSA63J-105	M.G.RESISTOR	1.0M 1/16W
R108	NRVA63D-223	M.F.RESISTOR	22K 16W
R109	NRVA63D-103	M.F.RESISTOR	10K 16W
R110	NRVA63D-472	M.F.RESISTOR	4.7K 16W
R111	NRVA63D-152	M.F.RESISTOR	1.5K 16W
R112	NRSA63J-105	M.G.RESISTOR	1.0M 1/16W
R113	NRVA63D-102	M.F.RESISTOR	1.0K 16W
R114	NRVA63D-271	M.F.RESISTOR	270 16W
R115	NRSA63J-105	M.G.RESISTOR	1.0M 16W
R116	NRSA63J-561	M.G.RESISTOR	560 1/16W
R117	NRVA63D-102	M.F.RESISTOR	1.0K 16W
R118	NRVA63D-182	M.F.RESISTOR	1.8K 1/16W
R119	NRVA63D-102	M.F.RESISTOR	1.0K 16W
R120	NRVA63D-182	M.F.RESISTOR	1.8K 1/16W
R121	NRSA63J-105	M.G.RESISTOR	1.0M 1/16W

Symbol No.	Part No.	Part Name	Description
R122	NRVA63D-393	M.F.RESISTOR	39K 1/16W
R123	NRVA63D-102	M.F.RESISTOR	1.0K 16W
R124	NRVA63D-102	M.F.RESISTOR	1.0K 16W
R125	NRVA63D-473	M.F.RESISTOR	47K 16W
R126	NRVA63D-392	M.F.RESISTOR	3.9K 16W
R127	NRVA63D-391	M.F.RESISTOR	390 16W
R128	NRVA63D-681	M.F.RESISTOR	680 16W
R129	NRVA63D-102	M.F.RESISTOR	1.0K 16W
R130	NRVA63D-471	M.F.RESISTOR	470 16W
R131	NRVA63D-683	M.F.RESISTOR	68K 1/16W
R132	NRVA63D-102	M.F.RESISTOR	1.0K 16W
R133	NRVA63D-472	M.F.RESISTOR	4.7K 16W
R134	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R201	NRVA63D-331	M.F.RESISTOR	330 16W
R202	NRVA63D-331	M.F.RESISTOR	330 16W
R203	NRVA63D-331	M.F.RESISTOR	330 16W
R204	NRVA63D-471	M.F.RESISTOR	470 16W
R205	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R206	NRSA63J-105	M.G.RESISTOR	1.0M 1/16W
R208	NRVA63D-223	M.F.RESISTOR	22K 16W
R209	NRVA63D-103	M.F.RESISTOR	10K 16W
R210	NRVA63D-472	M.F.RESISTOR	4.7K 16W
R211	NRVA63D-152	M.F.RESISTOR	1.5K 16W
R212	NRSA63J-105	M.G.RESISTOR	1.0M 1/16W
R213	NRVA63D-102	M.F.RESISTOR	1.0K 16W
R214	NRVA63D-271	M.F.RESISTOR	270 16W
R215	NRSA63J-105	M.G.RESISTOR	1.0M 16W
R216	NRSA63J-561	M.G.RESISTOR	560 1/16W
R217	NRVA63D-102	M.F.RESISTOR	1.0K 16W
R218	NRVA63D-182	M.F.RESISTOR	1.8K 1/16W
R219	NRVA63D-102	M.F.RESISTOR	1.0K 16W
R220	NRVA63D-182	M.F.RESISTOR	1.8K 1/16W
R221	NRSA63J-105	M.G.RESISTOR	1.0M 1/16W
R222	NRVA63D-393	M.F.RESISTOR	39K 1/16W
R223	NRVA63D-102	M.F.RESISTOR	1.0K 16W
R224	NRVA63D-102	M.F.RESISTOR	1.0K 16W
R225	NRVA63D-473	M.F.RESISTOR	47K 16W
R226	NRVA63D-392	M.F.RESISTOR	3.9K 16W
R227	NRVA63D-391	M.F.RESISTOR	390 16W
R228	NRVA63D-681	M.F.RESISTOR	680 16W
R229	NRVA63D-102	M.F.RESISTOR	1.0K 16W
R230	NRVA63D-471	M.F.RESISTOR	470 16W
R231	NRVA63D-472	M.F.RESISTOR	4.7K 1/16W
R234	NRVA63D-103	M.F.RESISTOR	10K 1/16W
R301	NRVA63D-223	M.F.RESISTOR	22K 16W
R302	NRVA63D-473	M.F.RESISTOR	47K 16W
R303	NRVA63D-223	M.F.RESISTOR	22K 16W
R304	NRVA63D-473	M.F.RESISTOR	47K 16W
R305	NRVA63D-223	M.F.RESISTOR	22K 16W
R306	NRVA63D-473	M.F.RESISTOR	47K 16W
R307	NRVA63D-473	M.F.RESISTOR	47K 16W
R308	NRVA63D-472	M.F.RESISTOR	4.7K 16W
R309	NRVA63D-393	M.F.RESISTOR	39K 16W
R310	NRVA63D-682	M.F.RESISTOR	6.8K 16W
R317	NRVA63D-912	M.F.RESISTOR	9.1K 16W
R318	NRVA63D-102	M.F.RESISTOR	1.0K 16W
R319	NRVA63D-183	M.F.RESISTOR	18K 1/16W
R320	NRVA63D-102	M.F.RESISTOR	1.0K 16W
R323	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R324	NRVA63D-102	M.F.RESISTOR	1.0K 16W

Symbol No.	Part No.	Part Name	Description
R327	NRVA63D-683	M.F.RESISTOR	68K 16W
R328	NRVA63D-333	M.F.RESISTOR	33K 16W
R329	NRVA63D-123	M.F.RESISTOR	12K 16W
R330	NRVA63D-823	M.F.RESISTOR	82K 16W
R331	NRVA63D-223	M.F.RESISTOR	22K 16W
R332	NRVA63D-683	M.F.RESISTOR	68K 16W
R333	NRVA63D-333	M.F.RESISTOR	33K 16W
R334	NRVA63D-123	M.F.RESISTOR	12K 16W
R335	NRVA63D-823	M.F.RESISTOR	82K 16W
R336	NRVA63D-223	M.F.RESISTOR	22K 16W
R337	NRVA63D-683	M.F.RESISTOR	68K 16W
R338	NRVA63D-333	M.F.RESISTOR	33K 16W
R339	NRVA63D-123	M.F.RESISTOR	12K 16W
R340	NRVA63D-823	M.F.RESISTOR	82K 16W
R341	NRVA63D-223	M.F.RESISTOR	22K 16W
R342	NRVA63D-183	M.F.RESISTOR	18K 16W
R343	NRVA63D-332	M.F.RESISTOR	3.3K 16W
R345	NRVA63D-682	M.F.RESISTOR	6.8K 16W
R346	NRVA63D-223	M.F.RESISTOR	22K 16W
R347	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R348	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R349	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R350	NRVA63D-332	M.F.RESISTOR	3.3K 1/16W
R351	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R352	NRVA63D-332	M.F.RESISTOR	3.3K 1/16W
R353	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
R354	NRVA63D-332	M.F.RESISTOR	3.3K 1/16W
R355	NRVA63D-102	M.F.RESISTOR	1.0K 1/16W
VR1	SVP1312-102	TRIM.RESISTOR	1K G GAMMA GAIN
VR2	SVP1312-102	TRIM.RESISTOR	1K B/R GAMMA
VR7	SVP1312-104	TRIM.RESISTOR	100K B FLARE
VR8	SVP1312-104	TRIM.RESISTOR	100K R FLARE
VR9	SVP1312-104	TRIM.RESISTOR	100K G FLARE
C1	NCT06CH-390	CER.CAPACITOR	39P 50V
C2	NCT06CH-150	CER.CAPACITOR	15P 50V
C3	NCT06CH-180	CER.CAPACITOR	18P 50V
C4	NCB21EK-473	CER.CAPACITOR	0.047 25V
C5	NCB21EK-473	CER.CAPACITOR	0.047 25V
C6	NCB21EK-473	CER.CAPACITOR	0.047 25V
C7	NCB21EK-473	CER.CAPACITOR	0.047 25V
C8	NCB21EK-473	CER.CAPACITOR	0.047 25V
C9	NCB21EK-473	CER.CAPACITOR	0.047 25V
C10	NCT06CH-3R0	CER.CAPACITOR	3.0P 50V
C11	NCB21EK-473	CER.CAPACITOR	0.047 25V
C12	NCB21EK-473	CER.CAPACITOR	0.047 25V
C13	NEF11AM-106	TAN.CAPACITOR	10 10V
C14	NCB31HK-103	CER.CAPACITOR	0.010 50V
C21	NEA10JM-337	E.CAPACITOR	330 6.3V
C22	NEA10JM-337	E.CAPACITOR	330 6.3V
C23	NEA10JM-337	E.CAPACITOR	330 6.3V
C24	NEA10JM-337	E.CAPACITOR	330 6.3V
C25	NCB21EK-473	CER.CAPACITOR	0.047 25V
C26	NCB21EK-473	CER.CAPACITOR	0.047 25V
C27	NCB21EK-473	CER.CAPACITOR	0.047 25V
C28	NCB21EK-473	CER.CAPACITOR	0.047 25V
C29	NCB21EK-473	CER.CAPACITOR	0.047 25V
C30	NCB21EK-473	CER.CAPACITOR	0.047 25V

[PR]

Symbol No.	Part No.	Part Name	Description	
C31	NCB21EK-473	CER.CAPACITOR	0.047	25V
C32	NCB21EK-473	CER.CAPACITOR	0.047	25V
C33	NCB21EK-473	CER.CAPACITOR	0.047	25V
C34	NCB21EK-473	CER.CAPACITOR	0.047	25V
C35	NCB21EK-473	CER.CAPACITOR	0.047	25V
C36	NCB21EK-473	CER.CAPACITOR	0.047	25V
C37	NCB21EK-473	CER.CAPACITOR	0.047	25V
C38	NCB21EK-473	CER.CAPACITOR	0.047	25V
C39	NCB21EK-473	CER.CAPACITOR	0.047	25V
C40	NCB21EK-473	CER.CAPACITOR	0.047	25V
C41	NCB21EK-473	CER.CAPACITOR	0.047	25V
C42	NCB21EK-473	CER.CAPACITOR	0.047	25V
C43	NCB21EK-473	CER.CAPACITOR	0.047	25V
C44	NCB21EK-473	CER.CAPACITOR	0.047	25V
C45	NCB21EK-473	CER.CAPACITOR	0.047	25V
C46	NCB21EK-473	CER.CAPACITOR	0.047	25V
C47	NCB21EK-473	CER.CAPACITOR	0.047	25V
C49	NCB21EK-473	CER.CAPACITOR	0.047	25V
C50	NCB21EK-473	CER.CAPACITOR	0.047	25V
C51	NCB21EK-473	CER.CAPACITOR	0.047	25V
C52	NCB21EK-473	CER.CAPACITOR	0.047	25V
C101	NCT06CH-390	CER.CAPACITOR	39P	50V
C102	NCT06CH-150	CER.CAPACITOR	15P	50V
C103	NCT06CH-180	CER.CAPACITOR	18P	50V
C104	NCB21EK-473	CER.CAPACITOR	0.047	25V
C105	NCB21EK-473	CER.CAPACITOR	0.047	25V
C106	NCB21EK-473	CER.CAPACITOR	0.047	25V
C107	NCB21EK-473	CER.CAPACITOR	0.047	25V
C108	NCB21EK-473	CER.CAPACITOR	0.047	25V
C109	NCB21EK-473	CER.CAPACITOR	0.047	25V
C110	NCT06CH-3R0	CER.CAPACITOR	3.0P	50V
C111	NCB21EK-473	CER.CAPACITOR	0.047	25V
C112	NCB21EK-473	CER.CAPACITOR	0.047	25V
C114	NCB31HK-103	CER.CAPACITOR	0.010	50V
C121	NEA10JM-337	E.CAPACITOR	330	6.3V
C122	NEA10JM-337	E.CAPACITOR	330	6.3V
C125	NCB21EK-473	CER.CAPACITOR	0.047	25V
C126	NCB21EK-473	CER.CAPACITOR	0.047	25V
C127	NCB21EK-473	CER.CAPACITOR	0.047	25V
C128	NCB21EK-473	CER.CAPACITOR	0.047	25V
C129	NCB21EK-473	CER.CAPACITOR	0.047	25V
C130	NCB21EK-473	CER.CAPACITOR	0.047	25V
C131	NCB21EK-473	CER.CAPACITOR	0.047	25V
C132	NCB21EK-473	CER.CAPACITOR	0.047	25V
C133	NCB21EK-473	CER.CAPACITOR	0.047	25V
C134	NCB21EK-473	CER.CAPACITOR	0.047	25V
C135	NCB21EK-473	CER.CAPACITOR	0.047	25V
C136	NCB21EK-473	CER.CAPACITOR	0.047	25V
C137	NCB21EK-473	CER.CAPACITOR	0.047	25V
C138	NCB21EK-473	CER.CAPACITOR	0.047	25V
C139	NCB21EK-473	CER.CAPACITOR	0.047	25V
C140	NCB21EK-473	CER.CAPACITOR	0.047	25V
C141	NCB21EK-473	CER.CAPACITOR	0.047	25V
C142	NCB21EK-473	CER.CAPACITOR	0.047	25V
C201	NCT06CH-390	CER.CAPACITOR	39P	50V
C202	NCT06CH-270	CER.CAPACITOR	27P	50V
C203	NCT06CH-180	CER.CAPACITOR	18P	50V
C204	NCB21EK-473	CER.CAPACITOR	0.047	25V
C205	NCB21EK-473	CER.CAPACITOR	0.047	25V

Symbol No.	Part No.	Part Name	Description	
C206	NCB21EK-473	CER.CAPACITOR	0.047	25V
C207	NCB21EK-473	CER.CAPACITOR	0.047	25V
C208	NCB21EK-473	CER.CAPACITOR	0.047	25V
C209	NCB21EK-473	CER.CAPACITOR	0.047	25V
C210	NCT06CH-3R0	CER.CAPACITOR	3.0P	50V
C211	NCB21EK-473	CER.CAPACITOR	0.047	25V
C212	NCB21EK-473	CER.CAPACITOR	0.047	25V
C213	NEF11AM-106	TAN.CAPACITOR	10	10V
C214	NCB31HK-103	CER.CAPACITOR	0.010	50V
C221	NEA10JM-337	E.CAPACITOR	330	6.3V
C222	NEA10JM-337	E.CAPACITOR	330	6.3V
C225	NCB21EK-473	CER.CAPACITOR	0.047	25V
C226	NCB21EK-473	CER.CAPACITOR	0.047	25V
C227	NCB21EK-473	CER.CAPACITOR	0.047	25V
C228	NCB21EK-473	CER.CAPACITOR	0.047	25V
C229	NCB21EK-473	CER.CAPACITOR	0.047	25V
C230	NCB21EK-473	CER.CAPACITOR	0.047	25V
C231	NCB21EK-473	CER.CAPACITOR	0.047	25V
C232	NCB21EK-473	CER.CAPACITOR	0.047	25V
C233	NCB21EK-473	CER.CAPACITOR	0.047	25V
C234	NCB21EK-473	CER.CAPACITOR	0.047	25V
C235	NCB21EK-473	CER.CAPACITOR	0.047	25V
C236	NCB21EK-473	CER.CAPACITOR	0.047	25V
C237	NCB21EK-473	CER.CAPACITOR	0.047	25V
C238	NCB21EK-473	CER.CAPACITOR	0.047	25V
C239	NCB21EK-473	CER.CAPACITOR	0.047	25V
C240	NCB21EK-473	CER.CAPACITOR	0.047	25V
C241	NCB21EK-473	CER.CAPACITOR	0.047	25V
C242	NCB21EK-473	CER.CAPACITOR	0.047	25V
C243	NCB21EK-473	CER.CAPACITOR	0.047	25V
C244	NCB21EK-473	CER.CAPACITOR	0.047	25V
C301	NEN11EM-475	E.CAPACITOR	4.7	25V
C309	NCB21EK-473	CER.CAPACITOR	0.047	25V
C310	NCB21EK-473	CER.CAPACITOR	0.047	25V
C311	NCB21EK-473	CER.CAPACITOR	0.047	25V
C312	NCB21EK-473	CER.CAPACITOR	0.047	25V
C313	NCB21EK-473	CER.CAPACITOR	0.047	25V
C314	NCB21EK-473	CER.CAPACITOR	0.047	25V
C315	NCT06CH-101	CER.CAPACITOR	100P	50V
C319	NCB21EK-473	CER.CAPACITOR	0.047	25V
C320	NCB21EK-473	CER.CAPACITOR	0.047	25V
L1	SCV1950-5R6	PEAKING COIL	5.6μH	
L2	SCV1950-5R6	PEAKING COIL	5.6μH	
L3	SCV1950-5R6	PEAKING COIL	5.6μH	
LC1	SCV1859-001	LOWPASS FILTER	10MHz	
LC2	SCV1859-001	LOWPASS FILTER	10MHz	
LC3	SCV1859-001	LOWPASS FILTER	10MHz	
CN3	CHB102W-24R	CONNECTOR	24-PIN	
CN4	CHB102W-14R	CONNECTOR	14-PIN	
TP1	SCV1880-001	TEST POINT		
TP2	SCV1880-001	TEST POINT		
TP3	SCV1880-001	TEST POINT		
TP4	SCV1880-001	TEST POINT		

5.6 CE board assembly list [0][6]

〈SCK2378-02-N0A〉

〈SCK2378-02-P0A〉

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Symbol No.	Part No.	Part Name	Description
TP5	SCV1880-001	TEST POINT	
TP101	SCV1880-001	TEST POINT	
TP102	SCV1880-001	TEST POINT	
TP103	SCV1880-001	TEST POINT	
TP104	SCV1880-001	TEST POINT	
TP105	SCV1880-001	TEST POINT	
TP201	SCV1880-001	TEST POINT	
TP202	SCV1880-001	TEST POINT	
TP203	SCV1880-001	TEST POINT	
TP204	SCV1880-001	TEST POINT	
TP205	SCV1880-001	TEST POINT	

Symbol No.	Part No.	Part Name	Description	
IC401	CXL5504M	I.C.(M)	SONY	
IC402	NJM062M	I.C.(M)	JRC	
IC403	AD817AR	I.C.(M)	ANALOG DEVICES	
IC404	TL026CPS	I.C.(M)	TEXAS	
IC501	MC74HC4053F	I.C.(M)	MOTOROLA	
IC502	TC7S32F	I.C.(M)	TOSHIBA	
IC503	AD817AR	I.C.(M)	ANALOG DEVICES	
IC504	AD817AR	I.C.(M)	ANALOG DEVICES	
IC505	NJM062M	I.C.(M)	JRC	
IC506	NJM062M	I.C.(M)	JRC	
IC507	AN2020S	I.C.(M)	MATSUSHITA	
IC508	NJM062M	I.C.(M)	JRC	
IC509	AD817AR	I.C.(M)	ANALOG DEVICES	
IC510	AD817AR	I.C.(M)	ANALOG DEVICES	
Q401	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
Q402	2SA1532(BC)	TRANSISTOR	MATSUSHITA	
Q403	2SA1532(BC)	TRANSISTOR	MATSUSHITA	
Q405	2SA1532(BC)	TRANSISTOR	MATSUSHITA	
Q406	2SC4562(QR)	TRANSISTOR	MATSUSHITA	
Q407	2SC4562(QR)	TRANSISTOR	MATSUSHITA	
Q408	2SC4562(QR)	TRANSISTOR	MATSUSHITA	
Q409	2SC4562(QR)	TRANSISTOR	MATSUSHITA	
Q410	2SK662(QR)	FET	MATSUSHITA	
Q411	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
Q412	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
Q413	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
Q414	XN4509	TRANSISTOR	MATSUSHITA	
Q428	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
Q429	2SA1532(BC)	TRANSISTOR	MATSUSHITA	
Q430	2SA1532(BC)	TRANSISTOR	MATSUSHITA	
Q501	2SA1748(QR)	TRANSISTOR	MATSUSHITA	
Q502	2SA1748(QR)	TRANSISTOR	MATSUSHITA	
Q503	XN4509	TRANSISTOR	MATSUSHITA	
Q504	2SA1748(QR)	TRANSISTOR	MATSUSHITA	
Q505	2SA1748(QR)	TRANSISTOR	MATSUSHITA	
Q506	XN4509	TRANSISTOR	MATSUSHITA	
Q507	2SA1748(QR)	TRANSISTOR	MATSUSHITA	
Q508	2SA1748(QR)	TRANSISTOR	MATSUSHITA	
Q509	XN4509	TRANSISTOR	MATSUSHITA	
Q510	2SK662(QR)	FET	MATSUSHITA	
Q511	2SK662(QR)	FET	MATSUSHITA	
D4	MA742	DIODE	MATSUSHITA	
D5	MA742	DIODE	MATSUSHITA	
R402	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R403	NRVA63D-563	M.F.RESISTOR	56K	16W
R404	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R405	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R406	NRVA63D-473	M.F.RESISTOR	47K	16W
R408	NRVA63D-152	M.F.RESISTOR	1.5K	16W
R409	NRVA63D-392	M.F.RESISTOR	3.9K	16W
R410	NRVA63D-272	M.F.RESISTOR	2.7K	16W
R411	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R412	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R413	NRSA63J-105	M.G.RESISTOR	1.0M	16W
R414	NRVA63D-222	M.F.RESISTOR	2.2K	16W

[CE]

Symbol No.	Part No.	Part Name	Description	
R415	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R416	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R417	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R418	NRVA63D-104	M.F.RESISTOR	100K	16W
R419	NRVA63D-223	M.F.RESISTOR	22K	16W
R420	NRVA63D-223	M.F.RESISTOR	22K	16W
R421	NRVA63D-471	M.F.RESISTOR	470	16W
R422	NRVA63D-471	M.F.RESISTOR	470	16W
R423	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R424	NRVA63D-152	M.F.RESISTOR	1.5K	16W
R425	NRVA63D-472	M.F.RESISTOR	4.7K	16W
R426	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R427	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R428	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R429	NRSA63J-0R0	M.G.RESISTOR	0	16W
R430	NRVA63D-272	M.F.RESISTOR	2.7K	16W
R431	NRVA63D-132	M.F.RESISTOR	1.3K	1/16W
R432	NRVA63D-272	M.F.RESISTOR	2.7K	16W
R433	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R434	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R435	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R436	NRVA63D-332	M.F.RESISTOR	3.3K	16W
R437	NRVA63D-272	M.F.RESISTOR	2.7K	16W
R438	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R439	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R440	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R441	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R442	NRVA63D-223	M.F.RESISTOR	22K	16W
R443	NRVA63D-223	M.F.RESISTOR	22K	16W
R444	NRVA63D-223	M.F.RESISTOR	22K	16W
R445	NRVA63D-273	M.F.RESISTOR	27K	16W
R446	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R447	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R448	NRVA63D-152	M.F.RESISTOR	1.5K	1/16W
R480	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R481	NRVA63D-152	M.F.RESISTOR	1.5K	16W
R484	NRSA63J-0R0	M.G.RESISTOR	0	16W
R486	NRSA63J-0R0	M.G.RESISTOR	0	16W
R488	NRVA63D-221	M.F.RESISTOR	220	1/16W
R489	NRVA63D-221	M.F.RESISTOR	220	1/16W
R501	NRVA63D-752	M.F.RESISTOR	7.5K	16W(U)
	NRVA63D-333	M.F.RESISTOR	33K	1/16W(E)
R502	NRVA63D-334	M.F.RESISTOR	330K	16W(U)
	NRVA63D-274	M.F.RESISTOR	270K	1/16W(E)
R503	NRVA63D-103	M.F.RESISTOR	10K	16W
R504	NRVA63D-184	M.F.RESISTOR	180K	16W
R505	NRVA63D-184	M.F.RESISTOR	180K	16W
R506	NRVA63D-152	M.F.RESISTOR	1.5K	16W(U)
	NRVA63D-132	M.F.RESISTOR	1.3K	1/16W(E)
R507	NRVA63D-752	M.F.RESISTOR	7.5K	16W(U)
	NRVA63D-333	M.F.RESISTOR	33K	1/16W(E)
R508	NRVA63D-334	M.F.RESISTOR	330K	16W(U)
	NRVA63D-274	M.F.RESISTOR	270K	1/16W(E)
R509	NRVA63D-103	M.F.RESISTOR	10K	16W
R510	NRVA63D-184	M.F.RESISTOR	180K	16W
R511	NRVA63D-184	M.F.RESISTOR	180K	16W
R512	NRVA63D-152	M.F.RESISTOR	1.5K	16W(U)
	NRVA63D-132	M.F.RESISTOR	1.3K	1/16W(E)
R513	NRVA63D-752	M.F.RESISTOR	7.5K	16W(U)
	NRVA63D-333	M.F.RESISTOR	33K	1/16W(E)

Symbol No.	Part No.	Part Name	Description	
R514	NRVA63D-334	M.F.RESISTOR	330K	16W(U)
	NRVA63D-274	M.F.RESISTOR	270K	1/16W(E)
R515	NRVA63D-103	M.F.RESISTOR	10K	16W
R516	NRVA63D-184	M.F.RESISTOR	180K	16W
R517	NRVA63D-184	M.F.RESISTOR	180K	16W
R518	NRVA63D-152	M.F.RESISTOR	1.5K	16W(U)
	NRVA63D-132	M.F.RESISTOR	1.3K	1/16W(E)
R519	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R520	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R521	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R522	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R523	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R524	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R525	NRVA63D-472	M.F.RESISTOR	4.7K	16W
R526	NRVA63D-182	M.F.RESISTOR	1.8K	16W
R527	NRVA63D-182	M.F.RESISTOR	1.8K	16W
R528	NRVA63D-392	M.F.RESISTOR	3.9K	16W
R529	NRVA63D-132	M.F.RESISTOR	1.3K	1/16W
R530	NRVA63D-184	M.F.RESISTOR	180K	16W(U)
R531	NRVA63D-184	M.F.RESISTOR	180K	16W(U)
R532	NRVA63D-912	M.F.RESISTOR	9.1K	16W
R533	NRVA63D-332	M.F.RESISTOR	3.3K	16W
R534	NRVA63D-330	M.F.RESISTOR	33	16W
R535	NRVA63D-123	M.F.RESISTOR	12K	16W(U)
	NRVA63D-183	M.F.RESISTOR	18K	1/16W(E)
R536	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R537	NRVA63D-152	M.F.RESISTOR	1.5K	16W
R538	NRVA63D-151	M.F.RESISTOR	150	16W
R539	NRVA63D-682	M.F.RESISTOR	6.8K	16W
R540	NRVA63D-271	M.F.RESISTOR	270	16W(U)
	NRVA63D-391	M.F.RESISTOR	390	1/16W(E)
R541	NRVA63D-122	M.F.RESISTOR	1.2K	1/16W(E)
R542	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R543	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R544	NRVA63D-122	M.F.RESISTOR	1.2K	16W
R545	NRVA63D-752	M.F.RESISTOR	7.5K	16W
R546	NRVA63D-471	M.F.RESISTOR	470	16W
R547	NRVA63D-272	M.F.RESISTOR	2.7K	16W
R548	NRVA63D-330	M.F.RESISTOR	33	16W
R549	NRVA63D-122	M.F.RESISTOR	1.2K	16W
R550	NRVA63D-333	M.F.RESISTOR	33K	16W
R551	NRVA63D-122	M.F.RESISTOR	1.2K	16W
R552	NRVA63D-183	M.F.RESISTOR	18K	16W
R553	NRVA63D-334	M.F.RESISTOR	330K	16W
R554	NRVA63D-334	M.F.RESISTOR	330K	16W(U)
	NRSA63J-105	M.G.RESISTOR	1.0M	1/16W(E)
R555	NRVA63D-103	M.F.RESISTOR	10K	16W(U)
	NRVA63D-562	M.F.RESISTOR	5.6K	1/16W(E)
R556	NRVA63D-123	M.F.RESISTOR	12K	16W(U)
	NRVA63D-104	M.F.RESISTOR	100K	1/16W(E)
R557	NRVA63D-473	M.F.RESISTOR	47K	16W
R558	NRVA63D-103	M.F.RESISTOR	10K	16W
R559	NRVA63D-273	M.F.RESISTOR	27K	16W
R560	NRVA63D-223	M.F.RESISTOR	22K	16W
R561	NRVA63D-122	M.F.RESISTOR	1.2K	16W
R562	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R563	NRVA63D-560	M.F.RESISTOR	56	16W
R564	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R565	NRSA63J-0R0	M.G.RESISTOR	0	16W
R566	NRVA63D-823	M.F.RESISTOR	82K	1/16W(E)

Symbol No.	Part No.	Part Name	Description	
R567	NRVA63D-334	M.F.RESISTOR	330K	1/16W (E)
R568	NRVA63D-152	M.F.RESISTOR	1.5K	16W
R569	NRVA63D-183	M.F.RESISTOR	18K	16W (U)
	NRVA63D-223	M.F.RESISTOR	22K	1/16W (E)
R570	NRVA63D-473	M.F.RESISTOR	47K	16W
R571	NRVA63D-103	M.F.RESISTOR	10K	16W
R572	NRVA63D-273	M.F.RESISTOR	27K	16W
R573	NRVA63D-153	M.F.RESISTOR	15K	16W
R574	NRVA63D-273	M.F.RESISTOR	27K	16W
R575	NRVA63D-153	M.F.RESISTOR	15K	16W
R576	NRVA63D-103	M.F.RESISTOR	10K	16W
R577	NRVA63D-103	M.F.RESISTOR	10K	16W
R578	NRVA63D-332	M.F.RESISTOR	3.3K	16W
R579	NRVA63D-332	M.F.RESISTOR	3.3K	16W
R580	NRVA63D-471	M.F.RESISTOR	470	16W
R581	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R582	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R583	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R584	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R585	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R586	NRVA63D-102	M.F.RESISTOR	1.0K	16W
VR11	SVP1313-503	TRIM.RESISTOR	50K	CC LEVEL
VR12	SVP1313-102	TRIM.RESISTOR	1K	B-Y BAL
VR13	SVP1313-102	TRIM.RESISTOR	1K	R-Y BAL
VR14	SVP1313-502	TRIM.RESISTOR	5K	R-Y LEVEL
VR15	SVP1313-502	TRIM.RESISTOR	5K	B-Y LEVEL
C401	NCT06CH-101	CER.CAPACITOR	100P	50V
C402	NCT06CH-220	CER.CAPACITOR	22P	50V
C403	NEF11CM-105	TAN.CAPACITOR	1.0	16V
C404	NCB21EK-473	CER.CAPACITOR	0.047	25V
C405	NCT03CH-102	CER.CAPACITOR	1000P	50V
C406	NEF11CM-105	TAN.CAPACITOR	1.0	16V
C407	NCB21EK-473	CER.CAPACITOR	0.047	25V
C408	NCB21EK-473	CER.CAPACITOR	0.047	25V
C409	NEA11AM-336	E.CAPACITOR	33	10V
C410	NCT06CH-330	CER.CAPACITOR	33P	50V
C411	NEA11AM-336	E.CAPACITOR	33	10V
C412	NEA11AM-336	E.CAPACITOR	33	10V
C414	NEA10JM-107	E.CAPACITOR	100	6.3V
C415	NEA10JM-107	E.CAPACITOR	100	6.3V
C416	NEA10JM-107	E.CAPACITOR	100	6.3V
C417	NEF11CM-105	TAN.CAPACITOR	1.0	16V
C418	NCB21EK-473	CER.CAPACITOR	0.047	25V
C419	NCB21EK-473	CER.CAPACITOR	0.047	25V
C420	NCB21EK-473	CER.CAPACITOR	0.047	25V
C421	NCB21EK-473	CER.CAPACITOR	0.047	25V
C422	NCB21EK-473	CER.CAPACITOR	0.047	25V
C423	NCB21EK-473	CER.CAPACITOR	0.047	25V
C424	NCB21EK-473	CER.CAPACITOR	0.047	25V
C425	NCB21EK-473	CER.CAPACITOR	0.047	25V
C426	NEF11VM-104	TAN.CAPACITOR	0.10	35V
C427	NEF11VM-104	TAN.CAPACITOR	0.10	35V
C441	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
C448	NEF11AM-475	TAN.CAPACITOR	4.7	10V
C449	NEF11AM-475	TAN.CAPACITOR	4.7	10V
C502	NCB21EK-473	CER.CAPACITOR	0.047	25V

Symbol No.	Part No.	Part Name	Description	
C503	NCB21EK-473	CER.CAPACITOR	0.047	25V
C505	NCB21EK-473	CER.CAPACITOR	0.047	25V
C506	NCB21EK-473	CER.CAPACITOR	0.047	25V
C507	NCB21EK-473	CER.CAPACITOR	0.047	25V
C508	NCB21EK-473	CER.CAPACITOR	0.047	25V
C509	NEA11AM-336	E.CAPACITOR	33	10V
C510	NCB21EK-473	CER.CAPACITOR	0.047	25V
C511	NCB21EK-473	CER.CAPACITOR	0.047	25V
C512	NCT06CH-330	CER.CAPACITOR	33P	50V (U)
	NCT06CH-270	CER.CAPACITOR	27P	50V (E)
C521	NEA10JM-107	E.CAPACITOR	100	6.3V
C522	NEA10JM-107	E.CAPACITOR	100	6.3V
C523	NEA10JM-107	E.CAPACITOR	100	6.3V
C524	NCB21EK-473	CER.CAPACITOR	0.047	25V
C525	NCB21EK-473	CER.CAPACITOR	0.047	25V
C526	NCB21EK-473	CER.CAPACITOR	0.047	25V
C527	NCB21EK-473	CER.CAPACITOR	0.047	25V
C528	NCB21EK-473	CER.CAPACITOR	0.047	25V
C529	NCB21EK-473	CER.CAPACITOR	0.047	25V
C530	NCB21EK-473	CER.CAPACITOR	0.047	25V
C531	NCB21EK-473	CER.CAPACITOR	0.047	25V
C532	NCB21EK-473	CER.CAPACITOR	0.047	25V
C533	NCB21EK-473	CER.CAPACITOR	0.047	25V
C534	NCB21EK-473	CER.CAPACITOR	0.047	25V
C535	NCB21EK-473	CER.CAPACITOR	0.047	25V
C536	NCB21EK-473	CER.CAPACITOR	0.047	25V
C537	NCB21EK-473	CER.CAPACITOR	0.047	25V
C538	NCB21EK-473	CER.CAPACITOR	0.047	25V
C539	NCB21EK-473	CER.CAPACITOR	0.047	25V
C540	NCB21EK-473	CER.CAPACITOR	0.047	25V
L4	SCV1950-470	PEAKING COIL	4.7μH	
L5	SCV1950-470	PEAKING COIL	4.7μH	
LC5	CE42164-001	L.P.F.	6.3MHz	(U)
	CE42206-001	LOWPASS FILTER	6.3MHz	(E)
LC6	SCV2031-001	DELAY LINE	150ns	
LC7	SCV2030-001	DELAY LINE	150ns	
CN1	CHB102W-24R	CONNECTOR	24-PIN	
CN2	CHB102W-14R	CONNECTOR	14-PIN	
TP401	SCV1880-001	TEST POINT		
TP403	SCV1880-001	TEST POINT		

5.7 SG board assembly list [0][7]

〈SCK2378-05-N0A〉

〈SCK2378-05-P0A〉 [0][7][ ][ ][ ][ ][ ][ ]

Symbol No.	Part No.	Part Name	Description	
IC1	TC50H001F	I.C.(M)	TOSHIBA	
IC2	TC50H000F	I.C.(M)	TOSHIBA	
IC3	TC50H001F	I.C.(M)	TOSHIBA	
IC4	LM1881M	I.C.(M)	NATIONAL SEMICO	
IC5	AD817AR	I.C.(M)	ANALOG DEVICES	
IC6	AD817AR	I.C.(M)	ANALOG DEVICES	
IC7	TC7S00F	I.C.(M)	TOSHIBA	
IC8	TC7S00F	I.C.(M)	TOSHIBA	
IC9	JCS0018	I.C.(M)	JVC	
IC10	TC7SU04F	I.C.(M)	TOSHIBA	
IC11	TC7SU04F	I.C.(M)	TOSHIBA	
IC12	MC74HC4053F	I.C.(M)	MOTOROLA	
IC13	UPC812G2	I.C.(M)	NEC	
IC14	TC7SU04F	I.C.(M)	TOSHIBA	
IC301	MC74HC4538AF	I.C.(M)	MOTOROLA	
Q1	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
Q2	2SC3932(ST)	TRANSISTOR	MATSUSHITA	
Q3	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
Q4	2SA1532(BC)	TRANSISTOR	MATSUSHITA	
Q5	2SJ163(Q.R)	F.E.T.	MATSUSHITA	
Q6	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
Q7	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
Q8	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
D1	MA335	DIODE	MATSUSHITA	
D2	MA335	DIODE	MATSUSHITA	
D3	MA335	DIODE	MATSUSHITA	
D4	MA335	DIODE	MATSUSHITA	
D5	MA335	DIODE	MATSUSHITA	
R1	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R2	NRVA63D-101	M.F.RESISTOR	100	16W
R3	NRVA63D-103	M.F.RESISTOR	10K	16W
R4	NRVA63D-471	M.F.RESISTOR	470	1/16W
R5	NRVA63D-392	M.F.RESISTOR	3.9K	16W
R7	NRVA63D-473	M.F.RESISTOR	47K	16W
R8	NRVA63D-473	M.F.RESISTOR	47K	16W
R9	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R10	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R11	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R12	NRSA63J-684	M.G.RESISTOR	680K	16W
R13	NRVA63D-471	M.F.RESISTOR	470	16W
R14	NRVA63D-473	M.F.RESISTOR	47K	16W
R15	NRVA63D-473	M.F.RESISTOR	47K	16W
R16	NRVA63D-103	M.F.RESISTOR	10K	16W
R17	NRVA63D-153	M.F.RESISTOR	15K	16W
R18	NRVA63D-153	M.F.RESISTOR	15K	1/16W
R19	NRVA63D-683	M.F.RESISTOR	68K	1/16W
R20	NRVA63D-472	M.F.RESISTOR	4.7K	16W
R21	NRVA63D-472	M.F.RESISTOR	4.7K	16W
R22	NRVA63D-104	M.F.RESISTOR	100K	16W
R23	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R24	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R25	NRVA63D-562	M.F.RESISTOR	5.6K	16W
R26	NRVA63D-103	M.F.RESISTOR	10K	16W
R27	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R28	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R29	NRVA63D-104	M.F.RESISTOR	100K	16W

Symbol No.	Part No.	Part Name	Description	
R30	NRVA63D-562	M.F.RESISTOR	5.6K	16W
R31	NRVA63D-103	M.F.RESISTOR	10K	16W
R32	NRVA63D-333	M.F.RESISTOR	33K	16W
R33	NRVA63D-223	M.F.RESISTOR	22K	16W
R35	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R36	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R37	NRSA63J-0R0	M.G.RESISTOR	0	16W(E)
R38	NRSA63J-0R0	M.G.RESISTOR	0	16W(U)
R39	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R40	NRSA63J-0R0	M.G.RESISTOR	0	16W(U)
R41	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R42	NRVA63D-104	M.F.RESISTOR	100K	16W
R43	NRVA63D-104	M.F.RESISTOR	100K	16W
R44	NRVA63D-104	M.F.RESISTOR	100K	16W
R45	NRSA63J-105	M.G.RESISTOR	1.0M	16W
R46	NRVA63D-221	M.F.RESISTOR	220	16W
R47	NRVA63D-333	M.F.RESISTOR	33K	1/16W(U)
	NRVA63D-223	M.F.RESISTOR	22K	1/16W(E)
R48	NRSA63J-0R0	M.G.RESISTOR	0	1/16W
R49	NRVA63D-223	M.F.RESISTOR	22K	16W
R50	NRVA63D-223	M.F.RESISTOR	22K	16W
R51	NRVA63D-104	M.F.RESISTOR	100K	16W
R52	NRVA63D-271	M.F.RESISTOR	270	1/16W
R53	NRSA63J-105	M.G.RESISTOR	1.0M	16W
R54	NRVA63D-104	M.F.RESISTOR	100K	16W
R55	NRVA63D-104	M.F.RESISTOR	100K	16W
R56	NRVA63D-221	M.F.RESISTOR	220	1/16W
R57	NRVA63D-103	M.F.RESISTOR	10K	1/16W(U)
	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W(E)
R60	NRVA63D-273	M.F.RESISTOR	27K	16W
R61	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R62	NRVA63D-563	M.F.RESISTOR	56K	16W
R64	NRVA63D-273	M.F.RESISTOR	27K	16W
R65	NRVA63D-222	M.F.RESISTOR	2.2K	16W
R71	NRVA02D-1000	M.F.RESISTOR	100	1/10W(U)
R71	NRVA02D-1000	M.F.RESISTOR	100	1/10W(E)
R301	NRVA63D-104	M.F.RESISTOR	100K	16W
R302	NRVA63D-333	M.F.RESISTOR	33K	16W
VR1	SVP1312-203	RTRIM.RESISTOR	20K	QUAD
VR2	SVP1312-203	RTRIM.RESISTOR	20K	4fsc
VR3	SVP1312-203	RTRIM.RESISTOR	20K	EOH
C1	NCB21EK-473	CER.CAPACITOR	0.047	25V
C2	NCB21EK-473	CER.CAPACITOR	0.047	25V
C3	NCT06CH-150	CER.CAPACITOR	15P	50V
C4	NCB21EK-473	CER.CAPACITOR	0.047	25V
C5	NCB21EK-473	CER.CAPACITOR	0.047	25V
C6	NCT06CH-120	CER.CAPACITOR	12P	50V
C7	NEA11AM-336	E.CAPACITOR	33	10V
C8	NCB21EK-473	CER.CAPACITOR	0.047	25V
C14	NCT06CH-331	CER.CAPACITOR	330P	50V
C15	NCB21EK-473	CER.CAPACITOR	0.047	25V
C16	NCT06CH-331	CER.CAPACITOR	330P	50V
C17	NCT06CH-331	CER.CAPACITOR	330P	50V
C18	NCB21EK-473	CER.CAPACITOR	0.047	25V
C19	NCB21EK-473	CER.CAPACITOR	0.047	25V
C20	NCB21EK-473	CER.CAPACITOR	0.047	25V

Symbol No.	Part No.	Part Name	Description	
C21	NEA10JM-107	E.CAPACITOR	100	6.3V
C22	NEA11AM-336	E.CAPACITOR	33	10V
C23	NEN10JM-106	E.CAPACITOR	10	6.3V
C24	NCT06CH-151	CER.CAPACITOR	150P	50V (U)
	NCT06CH-820	CER.CAPACITOR	82P	50V (E)
C25	NCT06CH-220	CER.CAPACITOR	22P	50V (U)
C26	NCB21EK-473	CER.CAPACITOR	0.047	25V
C27	NCB21EK-473	CER.CAPACITOR	0.047	25V
C28	NCB21EK-473	CER.CAPACITOR	0.047	25V
C29	NCT06CH-221	CER.CAPACITOR	220P	50V
C30	NEF11CM-105	TAN.CAPACITOR	1.0	16V
C31	NCB21EK-473	CER.CAPACITOR	0.047	25V
C32	NCB21EK-473	CER.CAPACITOR	0.047	25V
C33	NCT06CH-180	CER.CAPACITOR	18P	50V (U)
	NCT06CH-9R0	CER.CAPACITOR	9.0P	50V (E)
C34	NCB21EK-473	CER.CAPACITOR	0.047	25V
C35	NCT06CH-101	CER.CAPACITOR	100P	50V (U)
	NCB31HK-103	CER.CAPACITOR	0.010	50V (E)
C36	NCB21EK-473	CER.CAPACITOR	0.047	25V
C37	NEA11AM-336	E.CAPACITOR	33	10V
C38	NEA11AM-336	E.CAPACITOR	33	10V
C39	NCT06CH-390	CER.CAPACITOR	39P	50V (U)
	NCT06CH-270	CER.CAPACITOR	27P	50V (E)
C40	NCB21EK-473	CER.CAPACITOR	0.047	25V
C41	NCB21EK-473	CER.CAPACITOR	0.047	25V
C42	NCT06CH-221	CER.CAPACITOR	220P	50V
C43	NCT06CH-150	CER.CAPACITOR	15P	50V (U)
C45	NCB21EK-473	CER.CAPACITOR	0.047	25V
C46	NEA11AM-336	E.CAPACITOR	33	10V
C47	NCB21EK-473	CER.CAPACITOR	0.047	25V
C48	NCB21EK-473	CER.CAPACITOR	0.047	25V
C49	NCB21EK-473	CER.CAPACITOR	0.047	25V
C50	NCB21EK-473	CER.CAPACITOR	0.047	25V
C51	NCB31HK-103	CER.CAPACITOR	0.010	50V
C52	NCB21EK-473	CER.CAPACITOR	0.047	25V
C53	NCT06CH-101	CER.CAPACITOR	100P	50V
C54	NCT06CH-101	CER.CAPACITOR	100P	50V
C55	NCB31HK-103	CER.CAPACITOR	0.010	50V
C56	NFV41CJ-473	MYLAR CAPACITOR	0.047	16V (U)
	NEF11DM-684	TAN.CAPACITOR	0.68	20V (E)
C57	NEF11CM-105	TAN.CAPACITOR	1.0	16V
C58	NCB21EK-473	CER.CAPACITOR	0.047	25V
C61	NCT06CH-560	CER.CAPACITOR	56P	50V
C62	NCT06CH-560	CER.CAPACITOR	56P	50V
C63	NCB31HK-103	CER.CAPACITOR	0.010	50V
C64	NCB21EK-473	CER.CAPACITOR	0.047	25V
C65	NEF11VM-105	TAN.CAPACITOR	1.0	35V
C67	NCB21EK-473	CER.CAPACITOR	0.047	25V
C68	NCB21EK-473	CER.CAPACITOR	0.047	25V
C69	NCB21EK-473	CER.CAPACITOR	0.047	25V
C70	NEA11AM-336	E.CAPACITOR	33	10V
C71	NEA10JM-107	E.CAPACITOR	100	6.3V (U)
C71	NEA10JM-107	E.CAPACITOR	100	6.3V (E)
C72	NEA11AM-336	E.CAPACITOR	33	10V
C201	NCB21EK-473	CER.CAPACITOR	0.047	25V
C202	NCB21EK-473	CER.CAPACITOR	0.047	25V
C301	NCT06CH-560	CER.CAPACITOR	56P	50V
L1	SCV1950-5R6	PEAKING COIL	5.6μH	

Symbol No.	Part No.	Part Name	Description	
L2	NRSA02J-0R0	M.G.RESISTOR	0 1/10W	
L3	NRSA02J-3R9	M.G.RESISTOR	3.9 1/10W	
L4	NRSA02J-0R0	M.G.RESISTOR	0 1/10W	
L5	SCV1950-120	PEAKING COIL	12μH	
L6	SCV1950-120	PEAKING COIL	12μH	
L7	SCV1950-470	PEAKING COIL	47μH	(U)
	SCV1950-330	PEAKING COIL	33μH	(E)
L8	SCV1950-470	PEAKING COIL	47μH	(U)
	SCV1950-330	PEAKING COIL	33μH	(E)
L10	SCV1950-1R5	PEAKING COIL	1.5μH	
X1	SCV2219-001	CRYSTAL	14.31818MHz	(U)
	CE42275-001	CRYSTAL	17.734475MHz	(E)
X2	CE41081-A0A	CRYSTAL	28.6363MHz	(U)
	CE41212-001	CRYSTAL	28.375MHz	(E)
CN5	CHB102W-24R	CONNECTOR	24-PIN	
CN6	CHB102W-14R	CONNECTOR	14-PIN	
TP1	SCV1880-001	TEST POINT		
TP2	SCV1880-001	TEST POINT		
TP3	SCV1880-001	TEST POINT		
TP4	SCV1880-001	TEST POINT		

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Symbol No.	Part No.	Part Name	Description	
IC1	PLSC1080	I.C.(M)	JVC	
IC2	MB89012-109	I.C.(M)	FUJITSU	
IC3	S-8054HNCB	I.C.(M)	SEIKO	
IC4	S-2924AIF10	I.C.(M)	SEIKO	
IC5	MC74HC165F	I.C.(M)	MOTOROLA	
IC6	MC74HC165F	I.C.(M)	MOTOROLA	
IC7	MB88341PF	I.C.(M)	FUJITSU	
IC8	NJM062M	I.C.(M)	JRC	
IC9	NJM062M	I.C.(M)	JRC	
IC10	NJM062M	I.C.(M)	JRC	
IC11	NJM062M	I.C.(M)	JRC	
IC12	NJM062M	I.C.(M)	JRC	
IC13	NJM062M	I.C.(M)	JRC	
IC14	NJM062M	I.C.(M)	JRC	
IC15	NJM062M	I.C.(M)	JRC	
Q1	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
Q2	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
Q4	DTA124EU	TRANSISTOR	ROHM	
D1	MA143A	DIODE	MATSUSHITA	
D2	MA143A	DIODE	MATSUSHITA	
D3	MA143A	DIODE	MATSUSHITA	
LD1	AA1102W	L.E.D.	AW OPERATE	
R1	NRVA63D-101	M.F.RESISTOR	100	1/16W
R2	NRVA63D-101	M.F.RESISTOR	100	1/16W
R3	NRVA63D-101	M.F.RESISTOR	100	1/16W
R4	NRVA63D-101	M.F.RESISTOR	100	1/16W
R5	NRVA63D-101	M.F.RESISTOR	100	1/16W
R6	NRVA63D-101	M.F.RESISTOR	100	1/16W
R7	NRVA63D-101	M.F.RESISTOR	100	1/16W
R8	NRVA63D-101	M.F.RESISTOR	100	1/16W
R9	NRVA63D-101	M.F.RESISTOR	100	1/16W
R10	NRVA63D-101	M.F.RESISTOR	100	1/16W
R11	NRVA63D-101	M.F.RESISTOR	100	1/16W
R12	NRVA63D-101	M.F.RESISTOR	100	1/16W
R13	NRVA63D-101	M.F.RESISTOR	100	1/16W
R14	NRVA63D-101	M.F.RESISTOR	100	1/16W
R15	NRVA63D-101	M.F.RESISTOR	100	1/16W
R16	NRVA63D-101	M.F.RESISTOR	100	1/16W
R17	NRVA63D-101	M.F.RESISTOR	100	1/16W
R18	NRVA63D-101	M.F.RESISTOR	100	1/16W
R19	NRVA63D-101	M.F.RESISTOR	100	1/16W
R20	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R21	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R22	NRVA63D-101	M.F.RESISTOR	100	1/16W
R23	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R24	NRVA63D-101	M.F.RESISTOR	100	1/16W
R27	NRVA63D-101	M.F.RESISTOR	100	1/16W
R29	NRVA63D-101	M.F.RESISTOR	100	1/16W
R30	NRVA63D-101	M.F.RESISTOR	100	1/16W
R31	NRVA63D-101	M.F.RESISTOR	100	1/16W
R32	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R33	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W

Symbol No.	Part No.	Part Name	Description	
R34	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R35	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R36	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R37	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R38	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R39	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R40	NRVA63D-222	M.F.RESISTOR	2.2K	1/16W
R41	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R42	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R43	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R44	NRVA63D-563	M.F.RESISTOR	56K	1/16W
R45	NRVA63D-823	M.F.RESISTOR	82K	1/16W
R46	NRVA63D-822	M.F.RESISTOR	8.2K	1/16W
R47	NRVA63D-123	M.F.RESISTOR	12K	1/16W
R50	NRVA63D-823	M.F.RESISTOR	82K	1/16W
R51	NRVA63D-563	M.F.RESISTOR	56K	1/16W
R52	NRVA63D-153	M.F.RESISTOR	15K	1/16W
R53	NRVA63D-153	M.F.RESISTOR	15K	1/16W
R54	NRVA63D-823	M.F.RESISTOR	82K	1/16W
R55	NRVA63D-563	M.F.RESISTOR	56K	1/16W
R56	NRVA63D-273	M.F.RESISTOR	27K	1/16W
R57	NRVA63D-273	M.F.RESISTOR	27K	1/16W
R58	NRVA63D-183	M.F.RESISTOR	18K	1/16W
R59	NRVA63D-473	M.F.RESISTOR	47K	1/16W
R60	NRVA63D-682	M.F.RESISTOR	6.8K	1/16W
R61	NRVA63D-183	M.F.RESISTOR	18K	1/16W
R62	NRVA63D-473	M.F.RESISTOR	47K	1/16W
R63	NRVA63D-682	M.F.RESISTOR	6.8K	1/16W
R64	NRVA63D-183	M.F.RESISTOR	18K	1/16W
R65	NRVA63D-473	M.F.RESISTOR	47K	1/16W
R66	NRVA63D-682	M.F.RESISTOR	6.8K	1/16W
R67	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R68	NRVA63D-391	M.F.RESISTOR	390	1/16W
R69	NRVA63D-104	M.F.RESISTOR	100K	1/16W
R70	NRVA63D-151	M.F.RESISTOR	150	1/16W
R71	NRVA63D-271	M.F.RESISTOR	270	1/16W
R100	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R101	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R102	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R103	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R104	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R105	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R106	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R107	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R108	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R109	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R110	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R111	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R112	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R113	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R114	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R115	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R116	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R117	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R118	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R119	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R120	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R121	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R122	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R123	NRVA63D-223	M.F.RESISTOR	22K	1/16W

Symbol No.	Part No.	Part Name	Description
R124	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R125	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R126	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R127	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R128	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R129	NRVA63D-223	M.F.RESISTOR	22K 1/16W
R130	NRVA63D-332	M.F.RESISTOR	3.3K 1/16W
R131	NRVA63D-223	M.F.RESISTOR	22K 1/16W
VR1	SVP1313-103	TRIM.RESISTOR	10K H.PHASE
VR2	SVP1313-103	TRIM.RESISTOR	10K SC FINE
VR3	SVP1313-103	TRIM.RESISTOR	10K R INGAIN
VR4	SVP1313-103	TRIM.RESISTOR	10K G INGAIN
VR5	SVP1313-103	TRIM.RESISTOR	10K B INGAIN
VR6	SVP1313-501	TRIM.RESISTOR	500 M.BLK
C1	NEA10JM-107	E.CAPACITOR	100 6.3V
C2	NEF11AM-156	TAN.CAPACITOR	15 10V
C3	NFV41CJ-104	MYLAR CAPACITOR	0.10 16V
C4	NEA10JM-107	E.CAPACITOR	100 6.3V
C5	NEF11AM-156	TAN.CAPACITOR	15 10V
C6	NFV41CJ-104	MYLAR CAPACITOR	0.10 16V
C7	NEA10JM-107	E.CAPACITOR	100 6.3V
C8	NEF11AM-156	TAN.CAPACITOR	15 10V
C9	NEA11CM-476	E.CAPACITOR	47 16V
C10	NEF11EM-475	TAN.CAPACITOR	4.7 25V
C13	NCT06CH-151	CER.CAPACITOR	150P 50V
C14	NCT06CH-181	CER.CAPACITOR	180P 50V
C15	NCB21EK-473	CER.CAPACITOR	0.047 25V
C16	NEF11AM-156	TAN.CAPACITOR	15 10V
C17	NFV41CJ-104	MYLAR CAPACITOR	0.10 16V
C18	NCB21EK-473	CER.CAPACITOR	0.047 25V
C19	NCB21EK-473	CER.CAPACITOR	0.047 25V
C20	NEF11AM-156	TAN.CAPACITOR	15 10V
C21	NFV41CJ-104	MYLAR CAPACITOR	0.10 16V
C23	NCB21EK-473	CER.CAPACITOR	0.047 25V
C24	NCB21EK-473	CER.CAPACITOR	0.047 25V
C25	NCB21EK-473	CER.CAPACITOR	0.047 25V
C26	NCB21EK-473	CER.CAPACITOR	0.047 25V
C27	NFV41CJ-104	MYLAR CAPACITOR	0.10 16V
C28	NFV41CJ-104	MYLAR CAPACITOR	0.10 16V
C29	NCB21EK-473	CER.CAPACITOR	0.047 25V
C30	NCB21EK-473	CER.CAPACITOR	0.047 25V
C31	NCB21EK-473	CER.CAPACITOR	0.047 25V
C32	NCB21EK-473	CER.CAPACITOR	0.047 25V
C33	NCB21EK-473	CER.CAPACITOR	0.047 25V
C34	NCB21EK-473	CER.CAPACITOR	0.047 25V
C35	NCB21EK-473	CER.CAPACITOR	0.047 25V
C36	NCB21EK-473	CER.CAPACITOR	0.047 25V
C37	NCB21EK-473	CER.CAPACITOR	0.047 25V
C38	NCB21EK-473	CER.CAPACITOR	0.047 25V
C39	NCB21EK-473	CER.CAPACITOR	0.047 25V
C40	NCB21EK-473	CER.CAPACITOR	0.047 25V
C41	NCB21EK-473	CER.CAPACITOR	0.047 25V
C42	NCB21EK-473	CER.CAPACITOR	0.047 25V
C43	NCB21EK-473	CER.CAPACITOR	0.047 25V
C44	NCB21EK-473	CER.CAPACITOR	0.047 25V
C45	NCB21EK-473	CER.CAPACITOR	0.047 25V
C46	NCB21EK-473	CER.CAPACITOR	0.047 25V

Symbol No.	Part No.	Part Name	Description
C47	NCB21EK-473	CER.CAPACITOR	0.047 25V
C48	NCB21EK-473	CER.CAPACITOR	0.047 25V
C49	NCB21EK-473	CER.CAPACITOR	0.047 25V
C50	NCB21EK-473	CER.CAPACITOR	0.047 25V
C51	NCB21EK-473	CER.CAPACITOR	0.047 25V
C52	NCB21EK-473	CER.CAPACITOR	0.047 25V
C53	NCB21EK-473	CER.CAPACITOR	0.047 25V
C54	NCB21EK-473	CER.CAPACITOR	0.047 25V
C55	NCB21EK-473	CER.CAPACITOR	0.047 25V
L1	NRSA02J-0R0	M.G.RESISTOR	0 1/10W
L2	NRSA02J-0R0	M.G.RESISTOR	0 1/10W
L3	SSV1330-150	COIL	15μH
L4	NRSA02J-0R0	M.G.RESISTOR	0 1/10W
L5	SCV1950-4R7	PEAKING COIL	4.7μH
X1	SCV2029-001	CRYSTAL	7.37MHz
S1	SCV2247-004	SWITCH	
S2	SCV2247-004	SWITCH	
S3	SCV2247-004	SWITCH	
S4	SCV2247-004	SWITCH	
S5	SCV2361-001	SLIDE SWITCH	SC COARSE
S6	SCV2162-001	SWITCH	AUTO WHITE
CN7	CHB102W-24R	CONNECTOR	24-PIN
CN8	CHB102W-24R	CONNECTOR	24-PIN
CN100	SCV1814-024	CONNECTOR	24-PIN
CN101	SCV1934-08	CONNECTOR	8-PIN
TP1	SCV1880-001	TEST POINT	
TP2	SCV1880-001	TEST POINT	
TP3	SCV1880-001	TEST POINT	
TP4	SCV1880-001	TEST POINT	
TP5	SCV1880-001	TEST POINT	
TP6	SCV1880-001	TEST POINT	

5.9 DET board assembly list [0][9]

〈SCK2378-04-00A〉 [0][9]□□□□□□

Symbol No.	Part No.	Part Name	Description	
IC1	MB89012-109	I.C.(M)	FUJITSU	
IC2	TC4S81F	I.C.(M)	TOSHIBA	
IC3	UPC812G2	I.C.(M)	NEC	
IC4	UPC812G2	I.C.(M)	NEC	
IC5	MC14066BF	I.C.(M)	MOTOROLA	
IC6	UPC812G2	I.C.(M)	NEC	
IC7	MC14066BF	I.C.(M)	MOTOROLA	
IC8	NJM062M	I.C.(M)	JRC	
IC9	NJM062M	I.C.(M)	JRC	
IC10	MC74HC4052F	I.C.(M)	MOTOROLA	
Q1	DTC124EU	DIGI.TRANSISTOR	ROHM	
Q2	2SA1532(BC)	TRANSISTOR	MATSUSHITA	
Q3	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
D1	MA142A	DIODE	MATSUSHITA	
D2	MA142A	DIODE	MATSUSHITA	
D3	MA142A	DIODE	MATSUSHITA	
R1	NRVA63D-103	M.F.RESISTOR	10K	16W
R2	NRVA63D-473	M.F.RESISTOR	47K	16W
R4	NRVA63D-473	M.F.RESISTOR	47K	16W
R5	NRVA63D-473	M.F.RESISTOR	47K	16W
R6	NRVA63D-473	M.F.RESISTOR	47K	16W
R10	NRVA63D-223	M.F.RESISTOR	22K	16W
R11	NRVA63D-104	M.F.RESISTOR	100K	16W
R12	NRVA63D-683	M.F.RESISTOR	68K	16W
R13	NRVA63D-124	M.F.RESISTOR	120K	16W
R14	NRVA63D-223	M.F.RESISTOR	22K	16W
R15	NRVA63D-102	M.F.RESISTOR	1.0K	16W
R16	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R17	NRVA63D-124	M.F.RESISTOR	120K	1/16W
R18	NRVA63D-333	M.F.RESISTOR	33K	1/16W
R19	NRVA63D-101	M.F.RESISTOR	100	16W
R20	NRVA63D-103	M.F.RESISTOR	10K	16W
R21	NRVA63D-223	M.F.RESISTOR	22K	16W
R22	NRVA63D-153	M.F.RESISTOR	15K	1/16W
R23	NRVA63D-123	M.F.RESISTOR	12K	1/16W
R24	NRVA63D-102	M.F.RESISTOR	1K	16W
R25	NRVA63D-103	M.F.RESISTOR	10K	16W
R26	NRVA63D-472	M.F.RESISTOR	4.7K	1/16W
R27	NRVA63D-103	M.F.RESISTOR	10K	16W
R28	NRVA63D-103	M.F.RESISTOR	10K	16W
R29	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R30	NRVA63D-273	M.F.RESISTOR	27K	1/16W
R31	NRVA63D-124	M.F.RESISTOR	120K	16W
R38	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
VR1	SVP1312-203	RTRIM.RESISTOR	20K	OFFSET
VR2	SVP1312-503	TRIM.RESISTOR	50K	IRIS
C1	NCB21EK-473	CER.CAPACITOR	0.047	25V
C2	NCT03CH-151	CER.CAPACITOR	150P	50V
C3	NCT03CH-181	CER.CAPACITOR	180P	50V
C4	NCB21EK-473	CER.CAPACITOR	0.047	25V
C5	NCB21EK-473	CER.CAPACITOR	0.047	25V
C6	NCB21EK-473	CER.CAPACITOR	0.047	25V
C7	NCB21EK-473	CER.CAPACITOR	0.047	25V

Symbol No.	Part No.	Part Name	Description	
C8	NCB21EK-473	CER.CAPACITOR	0.047	25V
C9	NCB21EK-473	CER.CAPACITOR	0.047	25V
C10	NFV41CJ-393	MYLAR CAPACITOR	0.039	16V
C11	NEF11AM-106	TAN.CAPACITOR	10	10V
C13	NCB21EK-473	CER.CAPACITOR	0.047	25V
C14	NCB21EK-473	CER.CAPACITOR	0.047	25V
C15	NCT03CH-150	CER.CAPACITOR	15P	50V
C16	NFV41CJ-473	MYLAR CAPACITOR	0.047	16V
C17	NEF11VM-105	TAN.CAPACITOR	1.0	35V
C18	NEF11VM-105	TAN.CAPACITOR	1.0	35V
C19	NEF11VM-105	TAN.CAPACITOR	1.0	35V
C20	NEF11VM-105	TAN.CAPACITOR	1.0	35V
C21	NEA11CM-476	E.CAPACITOR	47	16V
C22	NCB21EK-473	CER.CAPACITOR	0.047	25V
C23	NEA11CM-476	E.CAPACITOR	47	16V
C24	NCB21EK-473	CER.CAPACITOR	0.047	25V
C25	NEA11CM-476	E.CAPACITOR	47	16V
C26	NCB21EK-473	CER.CAPACITOR	0.047	25V
C27	NCB21EK-473	CER.CAPACITOR	0.047	25V
C28	NCB21EK-473	CER.CAPACITOR	0.047	25V
C29	NEF11AM-156	TAN.CAPACITOR	15	10V
C30	NEF11VM-105	TAN.CAPACITOR	1.0	35V
C31	NCB21EK-473	CER.CAPACITOR	0.047	25V
L1	SCV1950-4R7	PEAKING COIL	4.7μH	
CN100	SCV1934-24	CONNECTOR	24-PIN	
CN101	SCV1814-008	CONNECTOR	8-PIN	
CN102	SCV1934-24	CONNECTOR	24-PIN	

5.10 IF board assembly list [1][0]

〈SCK2377-02-00A〉 [1][0]-□□□□□

Symbol No.	Part No.	Part Name	Description	
IC1	MC14053BF	I.C.(M)	MOTOROLA	
IC2	AD817AR	I.C.(M)	ANALOG DEVICES	
IC3	AD817AR	I.C.(M)	ANALOG DEVICES	
IC4	AD817AR	I.C.(M)	ANALOG DEVICES	
IC5	AD817AR	I.C.(M)	ANALOG DEVICES	
IC6	AD817AR	I.C.(M)	ANALOG DEVICES	
IC7	TC4S01F	I.C.(M)	TOSHIBA	
IC8	NJM78M09FA	I.C.(M)	JRC	
Q1	2SC3930(BC)	TRANSISTOR	MATSUSHITA	
Q2	2SD1820(QR)	TRANSISTOR	MATSUSHITA	
D1	MA143A	DIODE	MATSUSHITA	
D2	MA143A	DIODE	MATSUSHITA	
D3	MA143A	DIODE	MATSUSHITA	
D4	MA143A	DIODE	MATSUSHITA	
D5	MA143A	DIODE	MATSUSHITA	
D6	MA143A	DIODE	MATSUSHITA	
D7	MA143A	DIODE	MATSUSHITA	
D8	MA143A	DIODE	MATSUSHITA	
D9	MA143A	DIODE	MATSUSHITA	
D10	MA143A	DIODE	MATSUSHITA	
D11	MA143A	DIODE	MATSUSHITA	
D12	MA143A	DIODE	MATSUSHITA	
D13	MA143A	DIODE	MATSUSHITA	
D14	MA143A	DIODE	MATSUSHITA	
D15	SB140	DIODE	GENERAL INST	
D16	MA143A	DIODE	MATSUSHITA	
LD1	GL3EG44	LED	SHARP	
R1	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R2	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R3	NRVA63D-750	M.F.RESISTOR	75	1/16W
R4	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R5	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R6	NRVA63D-750	M.F.RESISTOR	75	1/16W
R7	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R8	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R9	NRVA63D-750	M.F.RESISTOR	75	1/16W
R10	NRVA63D-271	M.F.RESISTOR	270	1/16W
R11	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R12	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R13	NRVA63D-750	M.F.RESISTOR	75	1/16W
R14	NRVA63D-271	M.F.RESISTOR	270	1/16W
R15	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R16	NRVA63D-102	M.F.RESISTOR	1.0K	1/16W
R17	NRVA63D-750	M.F.RESISTOR	75	1/16W
R18	NRVA63D-750	M.F.RESISTOR	75	1/16W
R19	NRSA63J-471	M.G.RESISTOR	470	1/16W
R20	NRSA63J-100	M.G.RESISTOR	10	1/16W
R21	NRSA63J-100	M.G.RESISTOR	10	1/16W
R22	NRSA63J-100	M.G.RESISTOR	10	1/16W
R23	NRSA63J-104	M.G.RESISTOR	100K	16W
R24	NRSA63J-561	M.G.RESISTOR	560	1/16W
R25	NRSA63J-562	M.G.RESISTOR	5.6K	16W
R26	NRVA63D-183	M.F.RESISTOR	18K	1/16W
R28	NRSA63J-392	M.G.RESISTOR	3.9K	16W

Symbol No.	Part No.	Part Name	Description	
R29	NRSA63J-471	M.G.RESISTOR	470	16W
R30	NRSA63J-471	M.G.RESISTOR	470	16W
R31	NRSA63J-471	M.G.RESISTOR	470	16W
R32	NRSA63J-471	M.G.RESISTOR	470	16W
R33	NRSA63J-471	M.G.RESISTOR	470	16W
R34	NRSA63J-471	M.G.RESISTOR	470	16W
R35	NRSA63J-471	M.G.RESISTOR	470	16W
R36	NRSA63J-471	M.G.RESISTOR	470	16W
R37	NRSA63J-680	M.G.RESISTOR	68	1/16W
R38	NRSA63J-331	M.G.RESISTOR	330	1/16W
R39	NRSA63J-912	M.G.RESISTOR	9.1K	1/16W
R40	NRSA63J-162	M.G.RESISTOR	1.6K	1/16W
R41	NRSA63J-332	M.G.RESISTOR	3.3K	1/16W
R42	NRSA63J-471	M.G.RESISTOR	470	1/16W
R43	NRSA63J-472	M.G.RESISTOR	4.7K	1/16W
C6	NCB31HK-103	CER.CAPACITOR	0.010	50V
C7	NCB31HK-103	CER.CAPACITOR	0.010	50V
C8	NCB31HK-103	CER.CAPACITOR	0.010	50V
C9	NCB31HK-103	CER.CAPACITOR	0.010	50V
C10	NCB31HK-103	CER.CAPACITOR	0.010	50V
C11	NCB31HK-103	CER.CAPACITOR	0.010	50V
C12	NCB31HK-103	CER.CAPACITOR	0.010	50V
C13	NCB31HK-103	CER.CAPACITOR	0.010	50V
C14	NCB31HK-103	CER.CAPACITOR	0.010	50V
C15	NCB31HK-103	CER.CAPACITOR	0.010	50V
C16	NCB31HK-103	CER.CAPACITOR	0.010	50V
C17	NCB31HK-103	CER.CAPACITOR	0.010	50V
C18	NCB31HK-103	CER.CAPACITOR	0.010	50V
C19	NEF11AM-475	TAN.CAPACITOR	4.7	10V
C20	NEF11AM-475	TAN.CAPACITOR	4.7	10V
C21	NEF11AM-475	TAN.CAPACITOR	4.7	10V
C22	NEF11VM-105	TAN.CAPACITOR	1.0	35V
C24	NEF11AM-475	TAN.CAPACITOR	4.7	10V
C26	NEF11CM-335	TAN.CAPACITOR	3.3	16V
C27	NEF11VM-105	TAN.CAPACITOR	1.0	35V
C28	QER41EM-336	E.CAPACITOR	33	25V
C29	QER41EM-336	E.CAPACITOR	33	25V
C30	QER41EM-336	E.CAPACITOR	33	25V
C31	QER41EM-336	E.CAPACITOR	33	25V
C32	NCB31HK-103	CER.CAPACITOR	0.010	50V
C33	NCB31HK-103	CER.CAPACITOR	0.010	50V
C34	QER41EM-336	E.CAPACITOR	33	25V
C35	NEF11AM-475	TAN.CAPACITOR	4.7	10V
C36	NEF11AM-475	TAN.CAPACITOR	4.7	10V
LC1	EXC-EMT102BT	LC FILTER		
CN9	CHB102W-24P	CONNECTOR	24-PIN	
CN10	CHB102W-24P	CONNECTOR	24-PIN	

5.11 MT board assembly list [1][1]

〈SCK2377-01-00A〉 [1][1]□□□□□□

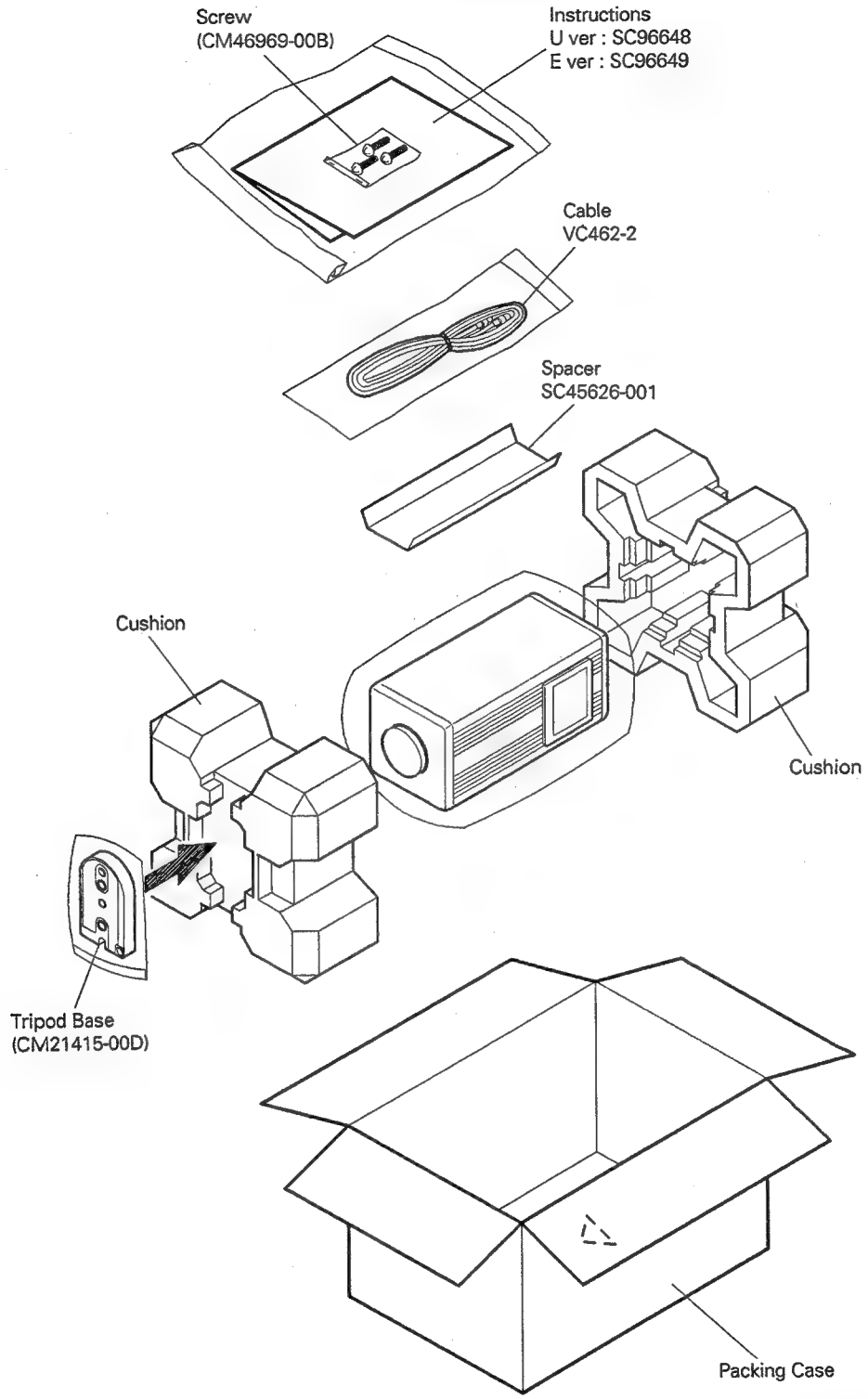
Symbol No.	Part No.	Part Name	Description	
C11	NCF21HZ-473	CER.CAPACITOR	0.047	50V
C12	NEF11AM-475	TAN.CAPACITOR	4.7	10V
C13	NCF21HZ-473	CER.CAPACITOR	0.047	50V
C14	NEF11AM-475	TAN.CAPACITOR	4.7	10V
C15	NCF21HZ-473	CER.CAPACITOR	0.047	50V
C16	NEF11AM-475	TAN.CAPACITOR	4.7	10V
C17	NCF21HZ-473	CER.CAPACITOR	0.047	50V
C18	NEF11AM-475	TAN.CAPACITOR	4.7	10V
C19	NCF21HZ-473	CER.CAPACITOR	0.047	50V
C20	NEF11AM-475	TAN.CAPACITOR	4.7	10V
C21	NCF21HZ-473	CER.CAPACITOR	0.047	50V
C22	NEF11AM-475	TAN.CAPACITOR	4.7	10V
C23	NCF21HZ-473	CER.CAPACITOR	0.047	50V
C24	NEF11CM-335	TAN.CAPACITOR	3.3	16V
C25	NCF21HZ-473	CER.CAPACITOR	0.047	50V
C26	NEF11AM-475	TAN.CAPACITOR	4.7	10V
C27	NEF11AM-475	TAN.CAPACITOR	4.7	10V
C28	NCF21HZ-473	CER.CAPACITOR	0.047	50V
C29	NCF21HZ-473	CER.CAPACITOR	0.047	50V
C30	NEF11VM-105	TAN.CAPACITOR	1.0	35V
C31	NCF21HZ-473	CER.CAPACITOR	0.047	50V
C32	NEF11VM-105	TAN.CAPACITOR	1.0	35V
C33	NCF21HZ-473	CER.CAPACITOR	0.047	50V
C34	NEF11AM-475	TAN.CAPACITOR	4.7	10V
C35	NCF21HZ-473	CER.CAPACITOR	0.047	50V
C36	NEF11AM-475	TAN.CAPACITOR	4.7	10V
C37	NEA11EM-336	E.CAPACITOR	33	25V
C38	NEA11EM-336	E.CAPACITOR	33	25V
C39	NEA11EM-336	E.CAPACITOR	33	25V
C40	NCF21HZ-473	CER.CAPACITOR	0.047	50V
C41	NEF11AM-475	TAN.CAPACITOR	4.7	10V
C42	NCF21HZ-473	CER.CAPACITOR	0.047	50V
C43	NEF11CM-335	TAN.CAPACITOR	3.3	16V
C44	NCF21HZ-473	CER.CAPACITOR	0.047	50V
C45	NEF11VM-105	TAN.CAPACITOR	1.0	35V
C46	NCF21HZ-473	CER.CAPACITOR	0.047	50V
C47	NEF11VM-105	TAN.CAPACITOR	1.0	35V
C48	NEF11AM-475	TAN.CAPACITOR	4.7	10V
C49	NCF21HZ-473	CER.CAPACITOR	0.047	50V
C50	NEF11CM-335	TAN.CAPACITOR	3.3	16V
C51	NCF21HZ-473	CER.CAPACITOR	0.047	50V
C52	NEF11VM-105	TAN.CAPACITOR	1.0	35V
C53	NCF21HZ-473	CER.CAPACITOR	0.047	50V
C54	NEF11AM-475	TAN.CAPACITOR	4.7	10V
C55	NCF21HZ-473	CER.CAPACITOR	0.047	50V
CN1	CHB102W-24P	CONNECTOR	24-PIN	
CN2	CHB102W-14P	CONNECTOR	14-PIN	
CN3	CHB102W-24P	CONNECTOR	24-PIN	
CN4	CHB102W-14P	CONNECTOR	14-PIN	
CN5	CHB102W-24P	CONNECTOR	24-PIN	
CN6	CHB102W-14P	CONNECTOR	14-PIN	
CN7	CHB102W-24P	CONNECTOR	24-PIN	
CN8	CHB102W-24P	CONNECTOR	24-PIN	
CN9	CHB102W-24R	CONNECTOR	24-PIN	
CN10	CHB102W-24R	CONNECTOR	24-PIN	
CN11	SCV2374-018	CONNECTOR	18-PIN	

5.12 CPA board assembly list [1][2]

〈SCK2403-01-00A〉 [1][2]□□□□□□

Symbol No.	Part No.	Part Name	Description	
IC16	TC4W53F	I.C(DIGI-MOS)	TOSHIBA	
IC17	TC4S66F	I.C.(M)	TOSHIBA	
IC18	TC4S66F	I.C.(M)	TOSHIBA	
IC19	NJM062M	I.C.(M)	JRC	
R72	NRVA63D-683	M.F.RESISTOR	68K	1/16W
R73	NRVA63D-123	M.F.RESISTOR	12K	1/16W
R74	NRVA63D-563	M.F.RESISTOR	56K	1/16W
R75	NRVA63D-103	M.F.RESISTOR	10K	1/16W
R76	NRVA63D-223	M.F.RESISTOR	22K	1/16W
R77	NRSA02J-0R0	M.G.RESISTOR	0	1/10W
CN21	SCV1770-012	CONNECTOR	12-PIN	

SECTION 6
REPACKING



Note: Accessories above are subject to change without notice.

VM00 78

No. SA-00-5186,1/10

JVC Manual Change Information

SUBJECT: Service manual corrections, DATE: July 12, 1994

■ The following items have been changed. Please note these in your service manual.

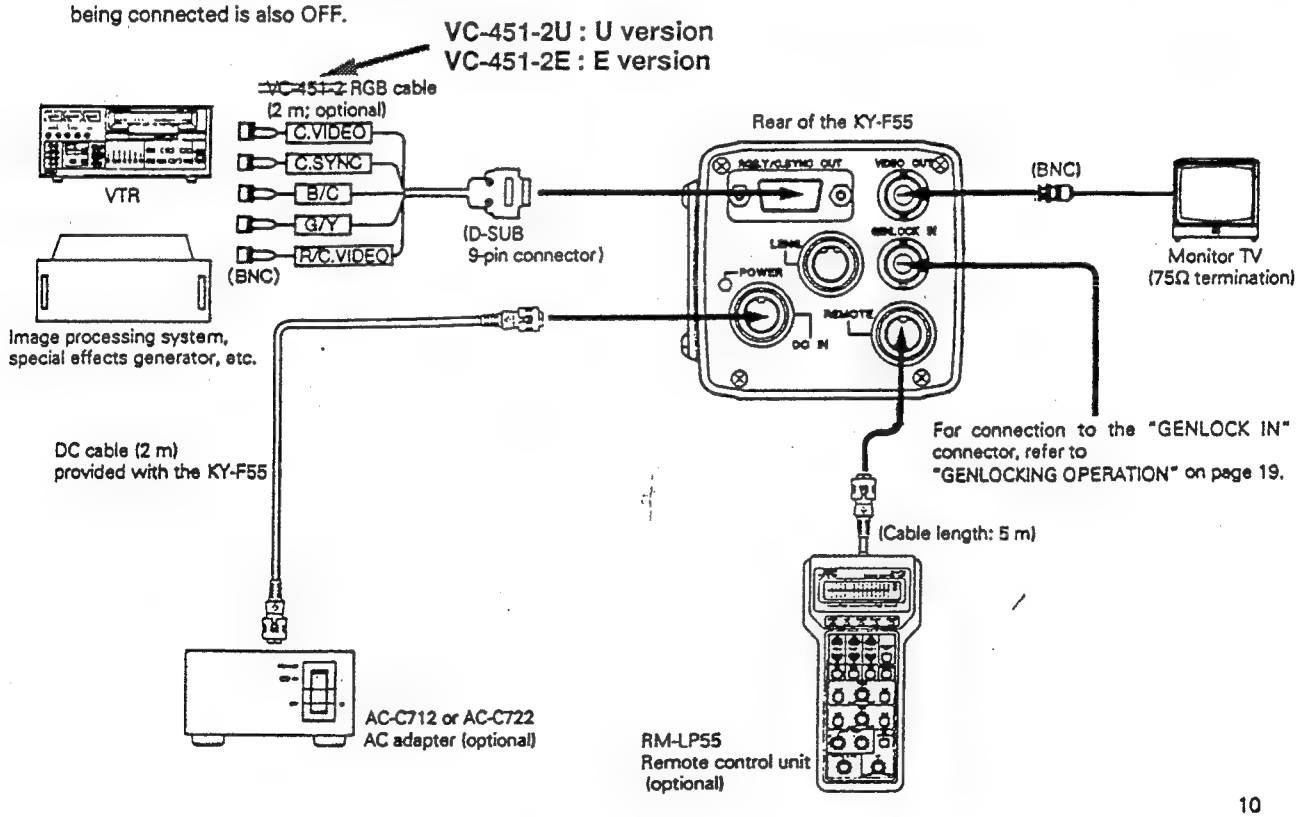
Model & Manual No.	Location	Reference Information	Affected Serial No.
KY-F55 U/E No. 60088	See below		All

Refer to "Instructions" of the service manual.

Marked potions should be corrected as below.

CONNECTIONS

- Before making any connections, be sure that any equipment being connected is also OFF.



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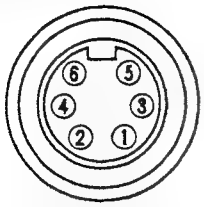
ATTACHMENT

(X)NONE	( )EXPLODED VIEW	( )ADJUSTMENT PROCEDURE
( )SCHEMATIC DIAGRAM	( )COMPONENT/PCB LAYOUT	( )

VICTOR COMPANY OF JAPAN,LIMITED
CAMERA SYSTEMS DIVISION, ENGINEERING SERVICE SECTION 14500
2969-2, Ishikawa-cho, hachioji-shi ,Tokyo, 192, Japan Telefax:81-246-60-7284 Telephone:81-426-60-7215

■ **Remote connector**
(6-pin, female)

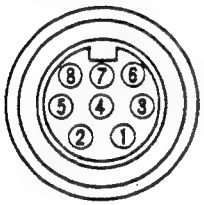


(Viewed from front)

Pin No.	Signal
1	Ground
2	OPERATE
3	Ground
4	+9 V DC output
5	SID2
6	SID1

SID 2
SID 1
+9V DC INPUT

■ **DC input connector**
(8-pin, female)



(Viewed from front)

Pin No.	Signal
1	—
2	Ground
3	—
4	—
5	Ground
6	+12 V DC input
7	—
8	+12 V DC input

SPECIFICATIONS

Pickup device : 1/3-inch interline CCD × 3
Effective number of pixels : 380,000 pixels (for NTSC)
440,000 pixels (for PAL)
Color separation optical system : F1.4, RGB 3-color separation prism
Lens mount : C-mount
Color system : wideband R-Y, B-Y encoder
Sync system : Internal/external
Sensitivity : F5.6, 2000 lux
S/N ratio : NTSC : 60 dB (typical), PAL : 58 dB (typical)
Horizontal resolution : 750 TV lines (Y signal)
580 TV lines (R/G/B signal)
Registration : 0.05 % (excluding lens characteristics)
Contour correction : Horizontal; dual-edged
Vertical; single-edged
Electric gain : +18 dB (ALC)
Electronic shutter speed : NTSC : Normal (1/60 sec), 1/100 sec
PAL : Normal (1/50 sec), 1/120 sec
External sync signal input : Composite video signal 1 V(p-p), 75 ohm or black burst signal 0.43 V(p-p), 75 ohm
Color bars : Built-in SMPTE-type color bars signal (NTSC)
Built-in full-type color bars signal (PAL)

Cautions on Installation

Although the calculative intensity of illumination is 15 lux, at least 40 to 50 lux is required as practical illumination. Make sure to secure 40 to 50 lux on installation.

Output signals
• Composite video signal : 1 Vp-p, 75 ohm
BNC connector one channel,
D-SUB 9-pin connector one channel
• Y/C signal Y : 1 Vp-p, 75 ohm (including sync)
C : 0.286 Vp-p, 75 ohm (burst) : for NTSC
0.3 Vp-p, 75 ohm (burst) : for PAL
D-SUB 9-pin connector one channel
(switchable between R/G/B signal)
• R/G/B signal : 0.7 Vp-p, 75 ohm (without sync) each
D-SUB 9-pin connector one channel
(switchable between Y/C signal)
• Composite sync signal : 2 Vp-p, 75 ohm
D-SUB 9-pin connector one channel
Lens connector : Applicable to the HZ-610MD, HZ-G6350
Remote connector : Applicable to the RM-LP55
Power supply : 12 V DC (10.5 to 15 V)
Power consumption : 7.1 W → 7.5W
Ambient temperature range : –5°C to 40°C (23°F to 104°F)
Weight : 490 g
Accessories : DC cable VC462-2 (2 m) × 1
Camera mounting bracket × 1
Screw (CM46969-00B) × 3

Design and specifications are subject to change without prior notice.

1.3.4 Removal of DR board

1. Remove two screws ④ from the front panel.

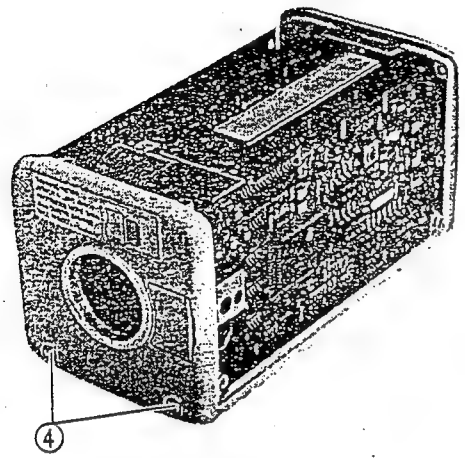


Fig. 1-6

2. Remove two screws ⑤ from the DR board to remove the board.

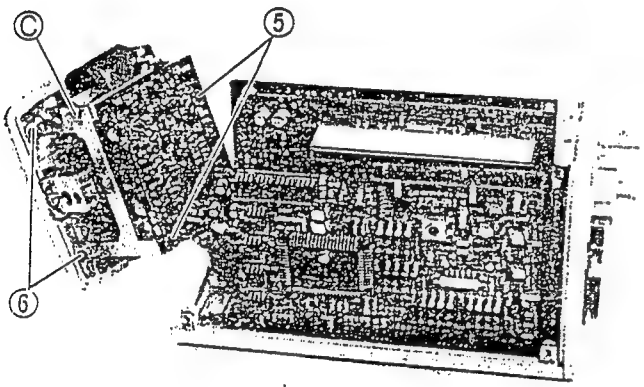


Fig. 1-7

1.4 REMOVAL OF FRONT PANEL

1. Remove two screws ④ from the front panel.
2. Remove two screw ⑥ retaining the DR board bracket ©.
3. Remove the plate Ⓓ from the front panel with a screwdriver.

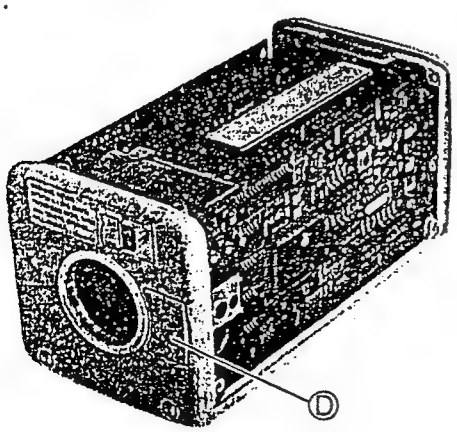


Fig. 1-8

4. Remove two screw ⑦, and the optical block assembly can be removed from the front panel. (The front panel is removed together with the quartz filter assembly.)

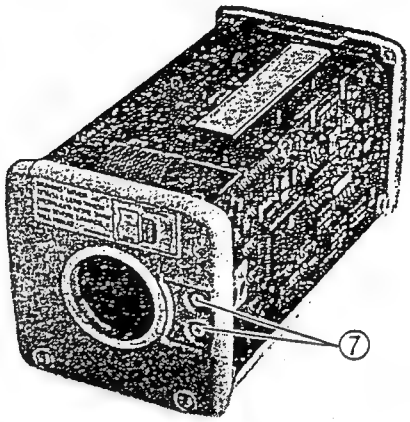


Fig. 1-9

1.5 DET BOARD

The DET board is connected with a connector (CN100) on the CP board. For servicing, remove the DET board from the CP board once, and again install the DET board as it is turned at an angle of 90° as shown in Fig. 1-10. At that time, use a servicing connector CN102 for the connector CN100 to connect it with the CP board.

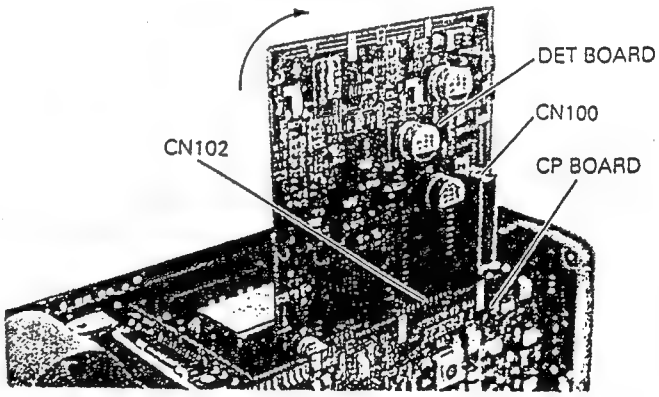


Fig. 1-10

1.6 IS board

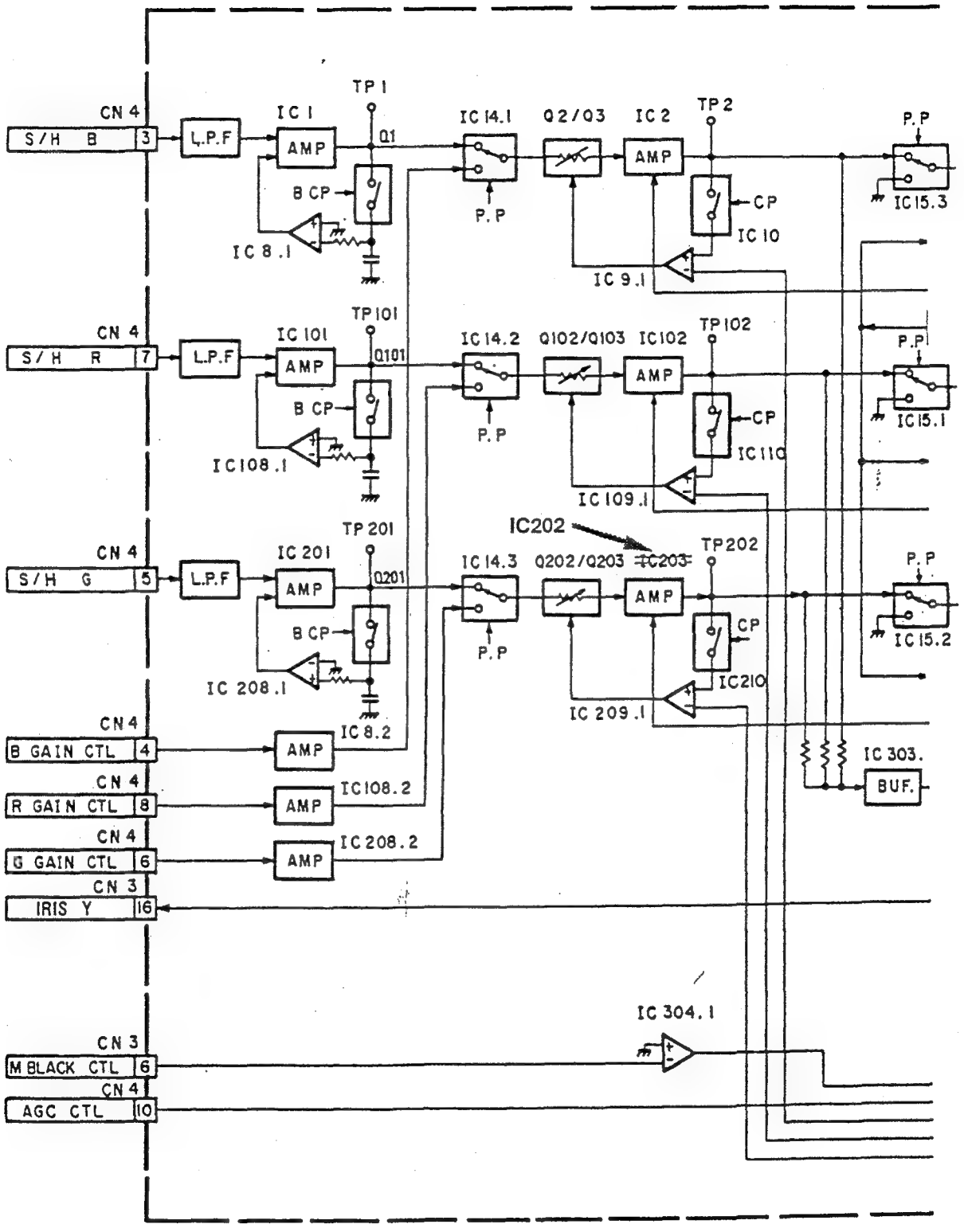
The is board is assembled with the CCD in a set. Although the assembly is removable by disconnecting it from the IC socket, do not remove it to prevent the registration from getting abnormal. (Do not rotate screws on the board.) for disconnecting the FPC cable, do it from the connector of the DR board. When replacing the FPC cable and chip parts, be most careful not to apply unreasonable force to the board.

Resetting of the software system

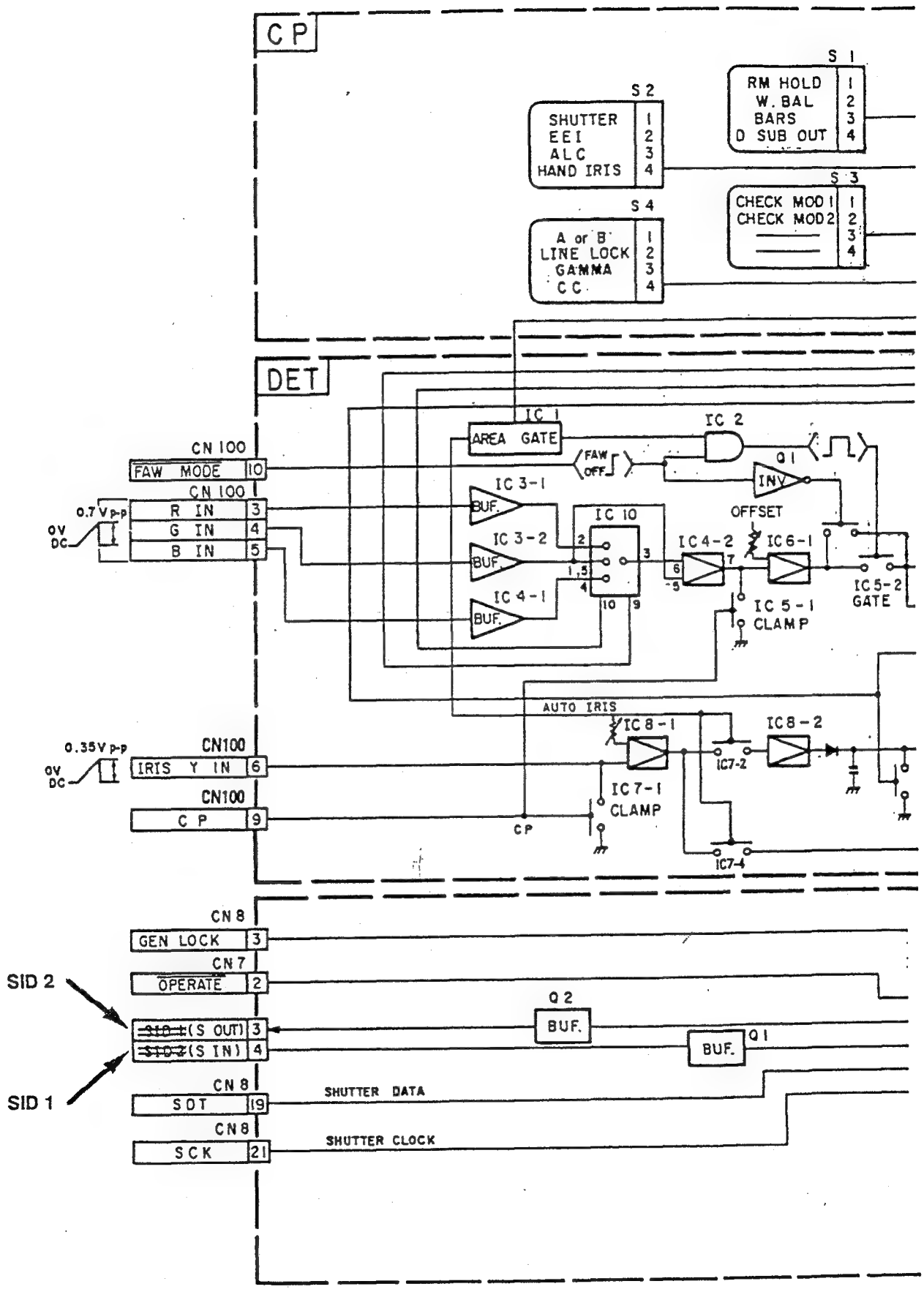
The information on the RM-LP55 written in the internal memory of the camera can be reset in the following manner.

Press the AUTO WHITE switch of the camera while turning on the AC-C712 or the AC-C722.

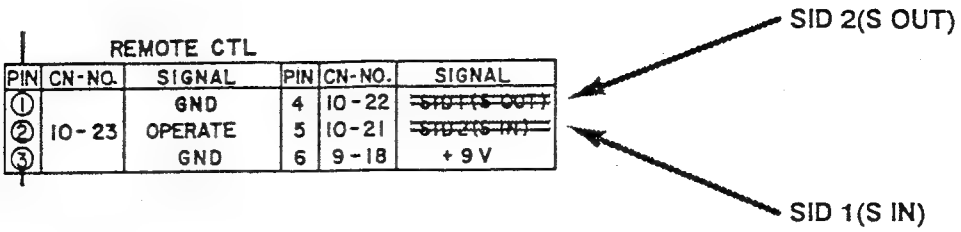
3.2 PR BOARD BLOCK DIAGRAM



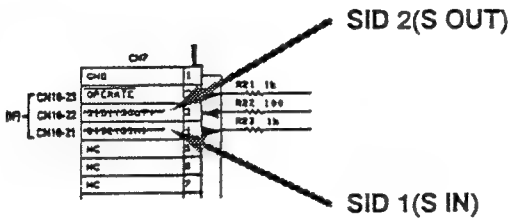
3.5 CP AND DET BOARD BLOCK DIAGRAMS



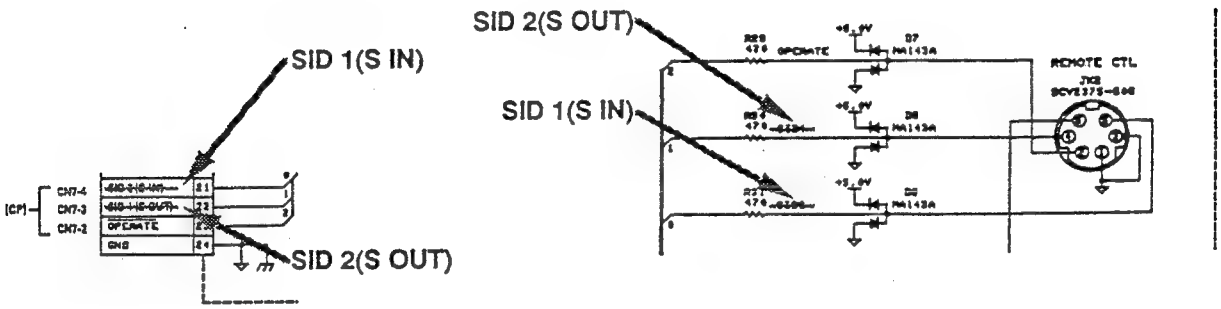
3.6 IF BOARD BLOCK DIAGRAM



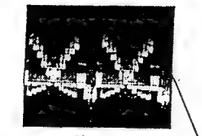
3.18 CP/CPA BOARD SCHEMATIC DIAGRAM

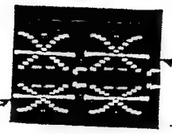


3.22 IF BOARD SCHEMATIC DIAGRAM

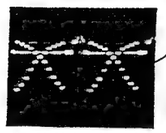


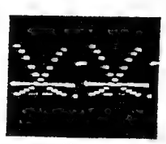
SA-00-5186,8/10


H-rate
300 mVp-p


120 mV
80 mVp-p


H-rate
280 mVp-p


H-rate
160 mVp-p

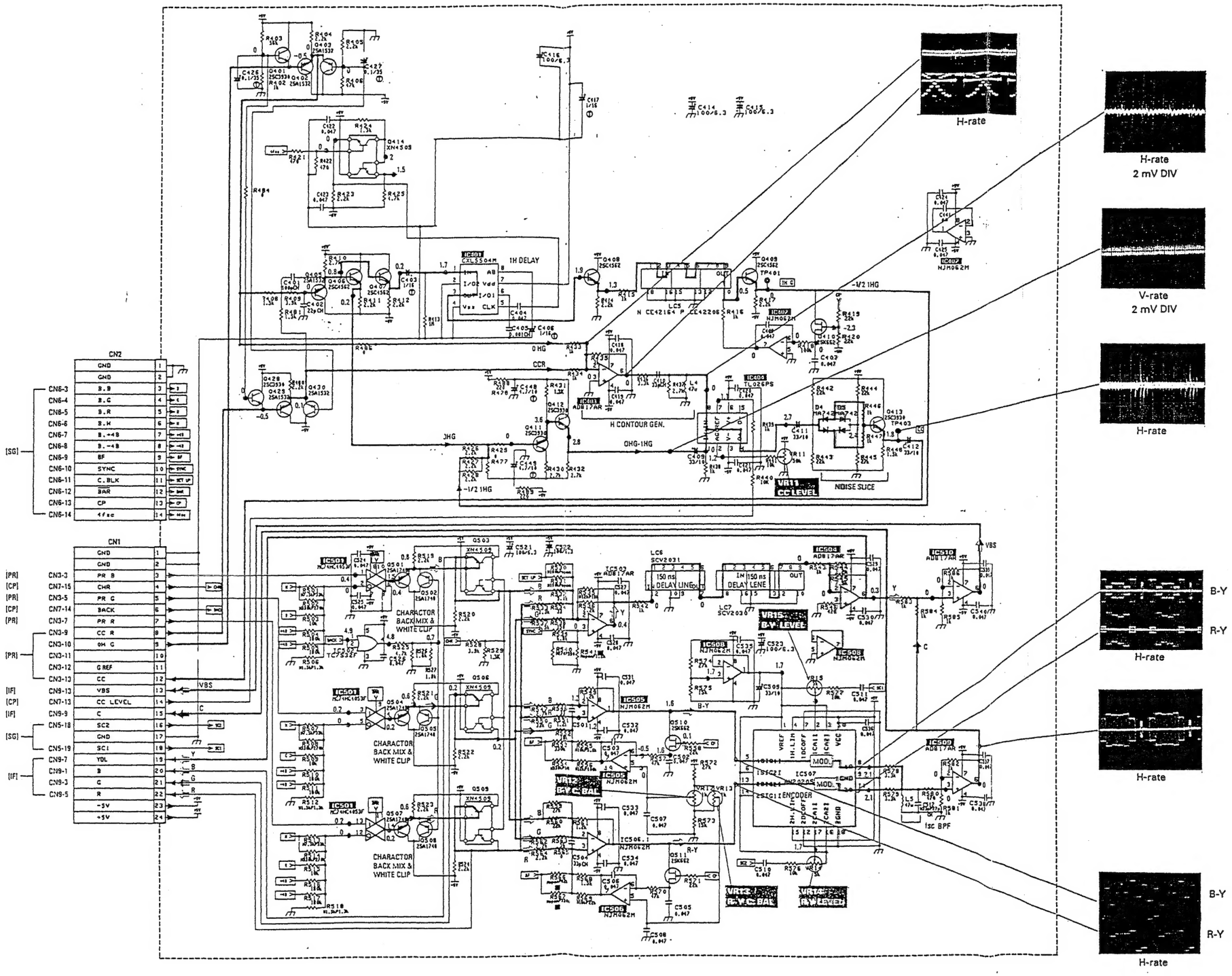

H-rate
300 mVp-p

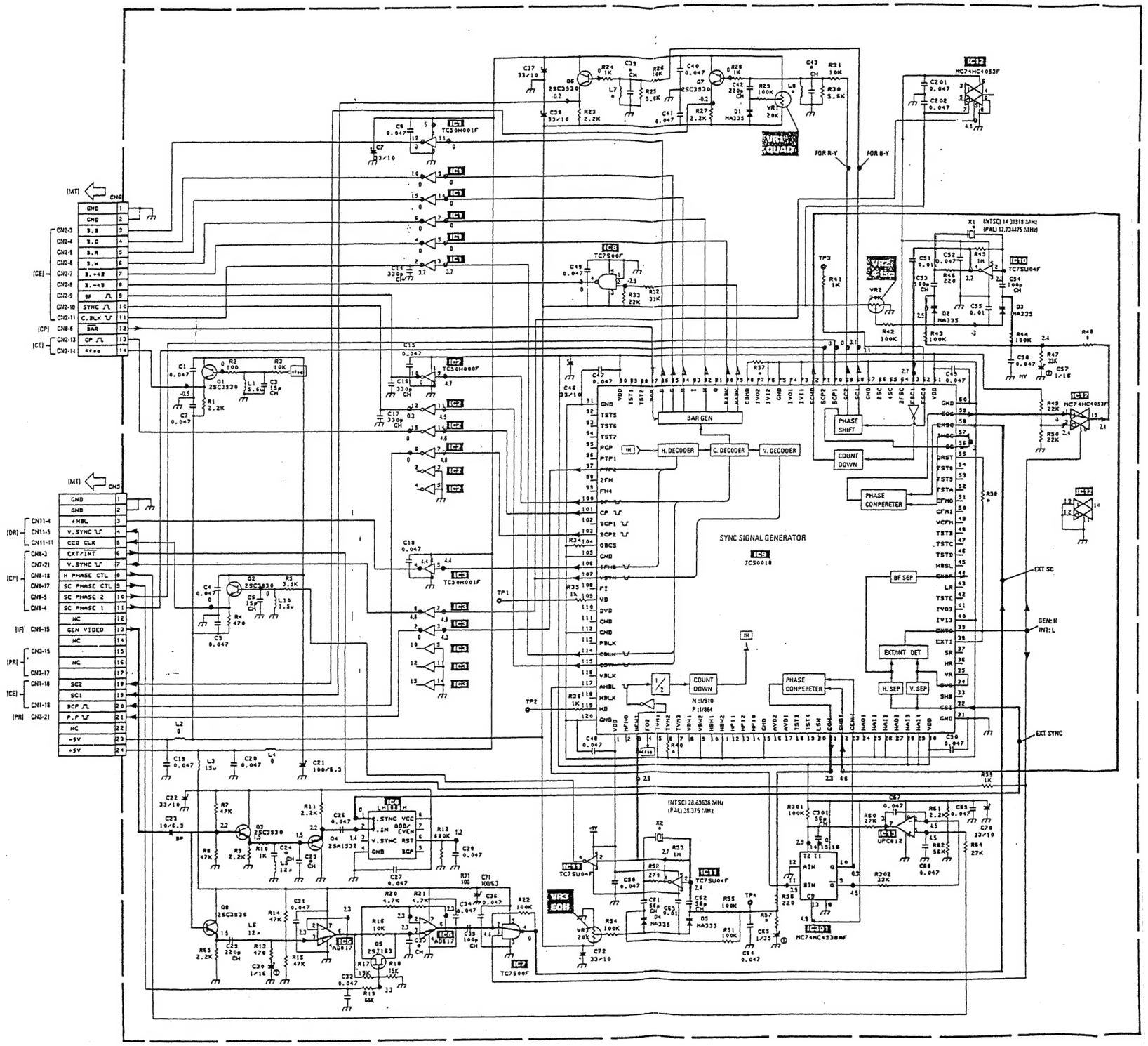

H-rate


H-rate
0.7 Vp-p


H-rate
300 mVp-p

SA-00-5186,9/10





	R37	R38	R40	X1	X2
NTSC	—	0	0	SCV2215-001H	CC41081-A0A
PAL	0	—	—	CC42275-001Y	CC41212-001

	L7	C39	L8	C43	R57	C33	C24	C25
NTSC	47u	39P	47u	15P	10k	18P	150P	22P
PAL	33u	27P	33u	—	1k	9P	82P	OPEN

The components do not have parts number or its value on the schematic diagrams, are not assembled on circuit board.
(Printed circuit patterns are still existed on the board.)
These components are removed from the attached schematic diagrams.

TABLE OF CONTENTS

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